Order	Indicator_Name	Туре	Component	Description	Field_Name
		1	-	Twelve digit Hydrologic Unit Code (HUC12) consistent with the WBD snapshot for	_
				NHD Plus Version 2.1 (see metadata for more information). Region 4 WSIO Version 1,	
1	Hydrologic Unit Code 12-Digit (HUC12)	Base	HUC ID Political	October 2013.	HUC12_TEXT
				Name of 12-digit Hydrologic Unit Code (HUC12) consistent with the WBD snapshot	
				for NHD Plus Version 2.1 (see metadata for more information). Region 4 WSIO	
2	Name HUC12 Watershed	Base	HUC ID Political	Version 1, October 2013.	NAME_HUC12
				Identifies all EPA Regions within a HUC12 boundary. Calculated from State attribute.	
3	EPA Region	Base	HUC ID Political	Region 4 WSIO Version 1, October 2013	EPA_REGION
				Identifies all States that a IIIIC12 have dam, average Course date weed was WRD	
				Identifies all States that a HUC12 boundary crosses. Source data used was WBD snapshot for NHD Plus Version 2.1 and NLCD2006 data (see metadata for more	
				·	
4	All States in HUC12 2014	Base	HUC ID Political	information). Developed for the EPA by the EPA Office of Water Recovery Potential Screening contractor, Cadmus. Region 4 WSIO Version 1, October 2013.	STATES2014
-	All States III Floci2 2014	base	TIOC ID Folitical	The percent of total HUC12 area that is comprised by a specific named state. Source	31A1L32014
				data used was WBD snapshot for NHD Plus Version 2.1 (see metadata for more	
				information) and 2013 state boundaries dataset from	
				http://www2.census.gov/geo/tiger/TIGER2013/STATE/. Region 4 WSIO Version 1,	
5	Single State HUC Flag (if 1 single state)	Base	HUC ID Political	October 2013.	INSTATE_14
	, , , , , , , , , , , , , , , , , , , ,				_
				Identifies HUC12s that include Tribal land presence. Source data used was WBD	
				snapshot for NHD Plus Version 2.1 (see metadata for more information) and Tribal	
				information from	
				http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/Tribal/MapServer/4, including	
				all lands associated with Federally-recognized tribal entities— Federally recognized	
				Reservations, Off-Reservation Trust Lands, and Census Oklahoma Tribal Statistical	
				Areas. Region 4 WSIO Version 1, October 2013.	
6	Tribal Lands in HUC12 Flag	Base	HUC ID Political		TRIBE_FLAG
				The percent of total HUC12 area constituting Tribal lands. Source data used was	
				WBD snapshot for NHD Plus Version 2.1 (see metadata for more information) and	
				Tribal information from	
				http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/Tribal/MapServer/4, including	
				all lands associated with Federally-recognized tribal entities— Federally recognized	
L				Reservations, Off-Reservation Trust Lands, and Census Oklahoma Tribal Statistical	
/	% Tribal Lands in HUC12	Base	HUC ID Political	Areas. Region 4 WSIO Version 1, October 2013.	TRIBE_PCT
				Identifies HUC12s that do not contain Tribal lands but border HUC12s that do contain	
				Tribal lands. Source data used was WBD snapshot for NHD Plus Version 2.1 (see	
				metadata for more information) and Tribal information from	
				http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/Tribal/MapServer/4, including	
				all lands associated with Federally-recognized tribal entities— Federally recognized	
				Reservations, Off-Reservation Trust Lands, and Census Oklahoma Tribal Statistical	
8	HUC12 Adjacent to Tribal HUC12s	Base	HUC ID Political	Areas. Region 4 WSIO Version 1, October 2013.	TRIBE_BUFR
				The percent of the HUC12 area that is not included in the United States or State.	
9	% Not In US	Base	HUC ID Political	Region 4 WSIO Version 1, October 2013.	LC0_NLCD06_PCT_WS
				The total area of a HUC12 boundary calculated from 30-meter resolution grids	
				(square meters). Source data used was a grid of the WBD snapshot for NHD Plus	
			Hydrologic	Version 2.1 (see metadata for more information). Region 4 WSIO Version 1, October	
10	Area Of Watershed (HUC12) In Square Meters (Grid)	Base	EcoRegion	2013.	AREAWS_GRID_SQMETER

Order	Indicator_Name	Туре	Component	Description	Field_Name
	=		-		
				The percent of the HUC12 that is land (not identified as surface water by the Water	
				Mask*). Equation used: (HUC12 area - Water Mask/HUC12 area) x 100. Region 4	
				WSIO Version 1, October 2013. *The Water Mask (see metadata for more	
				information) is determined using grid analysis to combine surface water features of	
			Hydrologic	NLCD2006 and NHD Plus version 2. The combination of these two datasets represents	
11	% Land in Watershed	Base	EcoRegion	surface water and is referred to as the Water Mask.	LAND_PCT_WS
				The percent of the HUC12 that is surface water as identified by the Water Mask*.	
				Equation used: Water Mask/ HUC12 area x 100. Region 4 WSIO Version 1, October	
				2013. *The Water Mask (see metadata for more information) is determined using	
				grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2.	
			Hydrologic	The combination of these two datasets represents surface water and is referred to as	
12	% Water in Watershed	Base	EcoRegion	·	WATER PCT WS
12	70 Water in Watershed	buse	Leonegion	the Water Mask.	WATER_I CI_WS
				The length of NHD stream features in HUC12 (kilometers). Calculated from the	
				"NHDPlus2 NHD Snapshot" dataset. Includes all NHDFlowline features with FTYPE	
				(feature type) equal to StreamRiver, CanalDitch, or Connector. NHDFlowline features	
			Hydrologic	with FTYPE equal to ArtificialPath are only included if they pass through a NHDArea	
13	Watershed NHDPlus2 Streamlength	Base	EcoRegion	feature with FTYPE equal to StreamRiver.	STREAMLGTH NHD
			Hydrologic	Area of NHD waterbody features in HUC12 (square kilometers). Calculated from the	
14	Watershed NHDPlus2 Waterbody Area	Base	EcoRegion		WBAREA_NHD
				The percent of the HUC12 that is in the *Hydrologically Connected Zone. *The	
				Hydrologically Connected Zone (HCZ, see metadata for more information) is	
				determined using grid analysis to combine surface water features of three datasets.	
				First, the surface water features from the 2006 National Land Cover Database (NLCD).	
				Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and	
				'Emergent Herbaceous Wetlands' (code 95). Source data used was the NLCD2006	
				version 1 (see metadata for more information). Second, the flowline and waterbody	
				features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded	
				October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see	
		1		metadata for more information). Third, all areas contiguous to surface water that	
		]		also has a wetness index value of 550 or greater. The wetness index, also known as	
		1		the compound topographic index (CTI), is a steady state wetness index. It is	
				commonly used to quantify topographic control on hydrological processes (see	
				metadata for more information). The combination of these three datasets represents	
			Hydrologic	the Hydrologically Connected Zone (HCZ). Equation used: (Hydrologically Connected	
15	% Hydrologically Connected Zone (HCZ) in Watershed	Base	EcoRegion		HCZ PCT WS
13	170 Try at Ologically Collifected Zolle (1102) III Watershed	שמשכ	LCONEGION	Lone, moote, a too hegion 4 word version t, october 2013.	1102_1 01_443

Order	Indicator_Name	Туре	Component	Description	Field_Name
	_				_
				The percent of the HUC12 that is in the *Riparian Zone. *The Riparian Zone (RZ, see	
				metadata for more information) is determined using grid analysis to combine two	
				surface water indicators and then place an approximate 100 meter buffer around	
				these features. First, the surface water features from the 2006 National Land Cover	
				Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands'	
				(code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was	
				NLCD2006 version 1, downloaded February 2011 (see metadata for more	
				information). Second, the flowline and waterbody features as represented in the	
				catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source	
				data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata	
				for more information). The combination of these two datasets represents surface	
				water and is referred to as the 'Water Mask' (see metadata for more information).	
				Last, distance from surface water is calculated using the ArcMap Spatial Analyst	
				Euclidean Distance tool. All cells with a distance of 108 meters or less are included in	
				the riparian zone. The combination of these two datasets and all cells with a distance	
				of 108 meters or less from surface water are included in the Riparian Zone (RZ).	
			Hydrologic	Equation used: (Riparian Zone/ HUC12) x 100. Region 4 WSIO Version 1, October	
16	% Riparian Zone (RZ) in Watershed	Base	EcoRegion	2013.	RIPARIAN_ZONE_PCT_WS
				All Level III Ecoregion codes within a HUC12 boundary. Level III Ecoregion source data	
			Hydrologic	used was downloaded in May 2010 (see metadata for more information). Region 4	
17	EcoRegion (2010) Level 3 Codes [All]	Base	EcoRegion	WSIO Version 1, October 2013.	ECOREGION2010_L3_CODES_ALL
				The Level III Ecoregion code with the greatest area within a HUC12 boundary. Level III	
			Hydrologic	Ecoregion source data used was downloaded in May 2010 (see metadata for more	
18	EcoRegion (2010) Level 3, 1st Code (Largest Area)	Base	EcoRegion	information). Region 4 WSIO Version 1, October 2013.	ECOREGION2010 L3 1STCODE
10	Econogion (2010) Econo (5, 15t code (Edigest/Ned)	Buse	Econcidion	mornationy. Region 4 World Version 1, October 2015.	ECONEGIONZOIO_ES_ISTCOBE
				Name of 6-digit Hydrologic Unit Code (HUC06) that contains a HUC12 boundary.	
			Hydrologic	Source data used was WBDHU6 Version 2 (June 2013), downloaded from NRCS WBD	
19	River Basin Name	Base	EcoRegion	February 2014. Region 4 WSIO Version 1, October 2013.	RIVER BASIN NAME
				Identifies the 8-digit Hydrologic Unit Code (HUCO8) that contains a HUC12 boundary.	
			Hydrologic	Source data used was WBDHU6 Version 2 (June 2013), downloaded from NRCS WBD	
20	Hydrologic Unit Code 8-Digit (HUC08)	Base	EcoRegion	February 2014. Region 4 WSIO Version 1, October 2013.	HUC08
				Name of 8-digit Hydrologic Unit Code (HUC08) that contains a HUC12 boundary.	
			Hydrologic	Source data used was WBDHU6 Version 2 (June 2013), downloaded from NRCS WBD	
21	Name Hydrologic Unit Code 8-Digit	Base	EcoRegion	February 2014. Region 4 WSIO Version 1, October 2013.	NAME_HUC08

Order	Indicator Name	Туре	Component	Description	Field_Name
		- 71			
				The total number of species associated with aquatic habitat that are listed as G1, G2,	
				or in the federal endangered species program that may reside within each HUC12. G1	
				and G2 denote Global Conservation Ranks classified by NatureServe. Metadata can	
				be found here:	
				https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B9E49	
				350E-728C-4B75-90B5-A2A2A62C019E%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature,	
				often referred to as ecosystem services. Additional information can be found here:	
				http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
			Biotic Community	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
22	Total number of aquatic species WS	Ecological	Condition	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	AQ ALL SP CNT WS
		J		, , , ,	
				The total number of species associated with wetland habitat that are listed as G1, G2,	
				or in the federal endangered species program that may reside within each HUC12. G1	
				and G2 denote Global Conservation Ranks classified by NatureServe. Metadata can	
				be found here:	
				https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B9E49	
				350E-728C-4B75-90B5-A2A2A62C019E%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature,	
				often referred to as ecosystem services. Additional information can be found here:	
				http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
			Biotic Community	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
23	Total number of wetland species WS	Ecological	Condition	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	WTL_ALL_SP_CNT_WS
				The total number of species associated with terrestrial habitat that are listed as G1,	
				G2, or in the federal endangered species program that may reside within each	
				HUC12. G1 and G2 denote Global Conservation Ranks classified by NatureServe.	
				Terrestrial habitat refers to land areas such as forests, grasslands, deserts and	
				rainforests. Metadata can be found here:	
				https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B9E49	
				350E-728C-4B75-90B5-A2A2A62C019E%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature,	
				often referred to as ecosystem services. Additional information can be found here:	
				http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
			Biotic Community	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
24	Total number of terrestrial species WS	Ecological	Condition	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	TR_ALL_SP_CNT_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
				The percent of the HUC12 with natural cover (excludes urban and agricultural classifications). N-index cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95) by the 2006	
25	% Natural Cover, N-index (2006) in Watershed	Ecological	Watershed Natural Condition	National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	N_INDEX_NLCD06_PCT_WS
	% Natural Court N indox 2 (2006) in Watershad	Factorical	Watershed Natural	The percent of the HUC12 with natural cover (excludes barren, urban or agricultural classifications). N-index 2 cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version	N. INDEXA NI CDOC. BCT. WG
26	% Natural Cover, N-index 2 (2006) in Watershed  % Wetlands (2006) in Watershed	Ecological  Ecological	Condition  Watershed Natural Condition	1, October 2013.  The percent of the HUC12 classified as wetlands by the 2006 National Land Cover Database. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	N_INDEX2_NLCD06_PCT_WS  WETLANDS NLCD06 PCT WS
			Watershed Natural	The percent area in a HUC12 boundary classified as 'Woody Wetlands' (code 90) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO	
28	% Woody Wetlands (2006) in Watershed	Ecological	Condition  Watershed Natural	Version 1, October 2013.  The percent area in a HUC12 boundary classified as 'Emergent Herbaceous Wetlands' (code 95) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more	LC90_NLCD06_PCT_WS
29	% Emergent Herbaceous Wetlands (2006) in Watershed	Ecological	Condition	information). Region 4 WSIO Version 1, October 2013.  The percent of the HUC12 classified with woody vegetation cover by the 2006 National Land Cover Database. Woody vegetation cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was	LC95_NLCD06_PCT_WS
30	% Woody Vegetation (2006) in Watershed	Ecological	Watershed Natural Condition	NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.  The percent of the HUC12 classified with forest cover by the 2006 National Land	WOODY_NLCD06_PCT_WS
			Watershed Natural	Cover Database. Forest cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), and 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more	
31	% Forest (2006) in Watershed	Ecological	Condition	information). Region 4 WSIO Version 1, October 2013.	FOREST_NLCD06_PCT_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
				The percent area in a HUC12 boundary classified as 'Deciduous Forest' (code 41) by	
				the 2006 National Land Cover Database. Source data used was NLCD2006 version 1,	
			Watershed Natural	downloaded February 2011 (see metadata for more information). Region 4 WSIO	
32	% Deciduous Forest (2006) in Watershed	Ecological	Condition	Version 1, October 2013.	LC41_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Evergreen Forest' (code 42) by	
				the 2006 National Land Cover Database. Source data used was NLCD2006 version 1,	
			Watershed Natural	downloaded February 2011 (see metadata for more information). Region 4 WSIO	
33	% Evergreen Forest (2006) in Watershed	Ecological	Condition	Version 1, October 2013.	LC42_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Mixed Forest' (code 43) by the	
				2006 National Land Cover Database. Source data used was NLCD2006 version 1,	
			Watershed Natural	downloaded February 2011 (see metadata for more information). Region 4 WSIO	
34	% Mixed Forest (2006) in Watershed	Ecological	Condition	Version 1, October 2013.	LC43_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Shrub/Scrub' (code 52) by the	
				2006 National Land Cover Database. Source data used was NLCD2006 version 1,	
			Watershed Natural	downloaded February 2011 (see metadata for more information). Region 4 WSIO	
35	% Shrub/Scrub (2006) in Watershed	Ecological	Condition	Version 1, October 2013.	LC52_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Grassland/Herbaceous' (code 71)	
				by the 2006 National Land Cover Database. Source data used was NLCD2006 version	
			Watershed Natural	1, downloaded February 2011 (see metadata for more information). Region 4 WSIO	
36	% Grassland/Herbaceous (2006) in Watershed	Ecological	Condition	Version 1, October 2013.	LC71_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Open Water' (code 11) by the	
				2006 National Land Cover Database. Source data used was NLCD2006 version 1,	
			Watershed Natural	downloaded February 2011 (see metadata for more information). Region 4 WSIO	
37	% Open Water (2006) in Watershed	Ecological	Condition	Version 1, October 2013.	LC11_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Perennial Ice/Snow' (code 12) by	
				the 2006 National Land Cover Database. Source data used was NLCD2006 version 1,	
			Watershed Natural	downloaded February 2011 (see metadata for more information). Region 4 WSIO	
38	% Perennial Ice/Snow (2006) in Watershed	Ecological	Condition	Version 1, October 2013.	LC12_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Barren Land (Rock/Sand/Clay)'	
				(code 31) by the 2006 National Land Cover Database. Source data used was	
			Watershed Natural	NLCD2006 version 1, downloaded February 2011 (see metadata for more	
39	% Barren Land (2006) in Watershed	Ecological	Condition	information). Region 4 WSIO Version 1, October 2013.	LC31_NLCD06_PCT_WS
33	78 Barren Land (2000) in Watershed	Ecological	Condition	The median value of percent canopy cover in a HUC12. Source data used was the	LC31_NLCD00_FC1_W3
			Watershed Natural	National Land Cover Database (NLCD) 2001 version 1 (see metadata for more	
40	% Canony Coyor 2001 Median Value of Watershed	Ecological			DCT CANODY COVERSOO1 MEDIANI WS
40	% Canopy Cover 2001, Median Value of Watershed	Ecological	Condition	information). Region 4 WSIO Version 1, October 2013.  The mean value of percent canopy cover in a HUC12. Source data used was the	PCT_CANOPY_COVER2001_MEDIAN_WS
			Watershed Natural	National Land Cover Database (NLCD) 2001 version 1 (see metadata for more	
41	% Canopy Cover 2001, Mean Value of Watershed	Ecological	Condition	information). Region 4 WSIO Version 1, October 2013.	PCT CANOPY COVER2001 MEAN WS
41	70 Carropy Cover 2001, Weari Value of Watersheu	Lcological	Condition	information). Region 4 W310 Version 1, October 2013.	FCI_CANOFI_COVERZOOI_WEAK_W3
				The standard deviation value of percent canopy cover in a HUC12. Source data used	
			Watershed Natural	was the National Land Cover Database (NLCD) 2001 version 1 (see metadata for more	
42	% Canopy Cover 2001, Standard Deviation, Watershed	Ecological	Condition	information). Region 4 WSIO Version 1, October 2013.	PCT CANOPY COVER2001 STD WS
	7. Tanapa do ta 2002, Standard Deviation, Tratershed		23	The sum of all values of percent canopy cover in a HUC12. Source data used was the	
			Watershed Natural	National Land Cover Database (NLCD) 2001 version 1 (see metadata for more	
43	% Canopy Cover 2001, Sum of Values in Watershed	Ecological	Condition	information). Region 4 WSIO Version 1, October 2013.	PCT CANOPY COVER2001 SUM WS
	The state of the s	200.08.001	Watershed Natural	The mean slope value in a HUC12. Source data used was NHDPlus version 2.1, DEM.	
44	Slope, Mean Value in Watershed	Ecological	Condition	Region 4 WSIO Version 1, October 2013.	SLP_MEAN_WS
	- The A		Watershed Natural	The standard deviation of slope values in a HUC12. Region 4 WSIO Version 1,	
45	Slope, Standard Deviation of Values in Watershed	Ecological	Condition	October 2013.	SLP_STD_WS
<u> </u>	p _ , _ tanaa. a _ tanaa. a. tanaa m tracamaa		22		

Order	Indicator Name	Туре	Component	Description	Field_Name
		7,70	Watershed Natural	The mean value elevation (cm) in a HUC12. Source data used was NHDPlus version	
46	Elevation (cm), Mean Value of Watershed	Ecological	Condition	2.1, DEM. Region 4 WSIO Version 1, October 2013.	ELEVATION_CMMEAN_WS
			Watershed Natural	The standard deviation value elevation (cm) in a HUC12. Source data used was	1 -1 1
47	Elevation (cm), Standard Deviation in Watershed	Ecological	Condition	NHDPlus version 2.1, DEM. Region 4 WSIO Version 1, October 2013.	ELEVATION CM STD WS
	, , ,	Ü	Watershed Natural	The maximum value elevation (cm) in a HUC12. Source data used was NHDPlus	
48	Elevation (cm), Range of Values in Watershed	Ecological	Condition	version 2.1, DEM. Region 4 WSIO Version 1, October 2013.	ELEVATION_CMRANGE_WS
		J	Watershed Natural	Average soil stability in HUC12. Calculated as one minus average K factor	
49	Watershed Mean Soil Stability	Ecological	Condition	(WS_KFACTOR).	WS_SOILSTABILITY
50	Percent rare ecosystem	Ecological	Watershed Natural Condition	An estimate of the percent of land within each HUC12 that could be classified as a rare ecosystem. Ecosystem rarity in EnviroAtlas is based on size, shape, and type of ecosystem. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B5E59 1817-C13D-498A-BAOD-F3D28D986324%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1	
51	Percent rare ecosystem protected	Ecological	Watershed Natural Condition	An estimate of the percent of land within each HUC12 that is protected and could be classified as a rare ecosystem. Ecosystem rarity in EnviroAtlas is based on size, shape, and type of ecosystem. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B5E59 1817-C13D-498A-BAOD-F3D28D986324%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1	
52	Carbon storage by tree biomass (kg/m2)	Ecological	Watershed Natural Condition	An estimate of the kilograms of dry carbon stored per square meter of above ground biomass of trees and forests in each HUC12. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B60BE 4324-84B3-4C0F-A9A3-22E198F814E6%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1	

Order	Indicator_Name	Туре	Component	Description	Field_Name
53	Carbon storage by tree root biomass (kg/m2)	Ecological	Watershed Natural Condition	An estimate of the kilograms of dry carbon stored per square meter in below ground biomass in each HUC12. Biomass below ground includes tree root biomass and soils. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B60BE 4324-84B3-4C0F-A9A3-22E198F814E6%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	CARBON STORE ROOT BIO MASS WS
54	Natural biological nitrogen fixation (kg N/ha/yr)	Ecological	Watershed Natural	This map depicts mean biological nitrogen fixation in natural and semi-natural ecosystems within each subwatershed (12-digit HUC) in kg N/ha/yr. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B1B0B 5221-C726-4E7D-93FD-23F7A4FF8930%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	
55	Cultivate biologic nitrogen fixation(kg N/ha/yr)WS	Ecological	Watershed Natural	The mean rate of biological nitrogen fixation from the cultivation of crops within a HUC12 (kg N/ha/yr). Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B18DA 5C01-F53D-4CC3-B557-046C3FF5A584%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	

Order	Indicator_Name	Туре	Component	Description	Field_Name
				The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as natural cover (excluding urban and agriculture) by the 2006 National Land Cover Database. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be	
				found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see	
				metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater.	
			HCZ -Corridor	The combination of these three datasets represents the Hydrologically Connected	
56	% Natural Cover, N-index (2006) in HCZ	Ecological	Natural Condition	Zone (HCZ).	N_INDEX_NLCD06_PCT_HZ
57	% Natural Cover, N-index 2 (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as natural cover (excluding barren, urban and agriculture) by the 2006 National Land Cover Database. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 99), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtlLA) version 2004. ATtlLA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	N_INDEX2_NLCD06_PCT_HZ
			HCZ -Corridor	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as wetlands by the 2006 National Land Cover Database. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these	
58	% Wetlands (2006) in HCZ	Ecological	Natural Condition	three datasets represents the Hydrologically Connected Zone (HCZ).	WETLANDS_NLCD06_PCT_HZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
59	% Woody Wetlands (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Woody Wetlands' (code 90) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC90_NLCD06_PCT_HZ
60	% Emergent Herbaceous Wetlands (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Emergent Herbaceous Wetlands' (code 95) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC95_NLCD06_PCT_HZ
61	% Woody Vegetation (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified with woody vegetation cover by the 2006 National Land Cover Database. Woody vegetation cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	WOODY_NLCD06_PCT_HZ
62	% Forest (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified with forest cover by the 2006 National Land Cover Database. Forest cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), and 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	FOREST_NLCD06_PCT_HZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
63	% Shrub/Scrub (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Shrub/Scrub' (code 52) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC52_NLCD06_PCT_HZ
64	% Grassland/Herbaceous (2006) in HCZ	Ecological	HCZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Grassland/Herbaceous' (code 71) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC71 NLCD06 PCT HZ
	HCZ Mean Soil Stability	Ecological	HCZ -Corridor	Average soil stability in HCZ*. Calculated as one minus average K factor in HCZ (HCZ_KFACTOR). *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features of three datasets. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was the NLCD2006 version 1 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Third, all areas contiguous to surface water that also has a wetness index value of 550 or greater. The wetness index, also known as the compound topographic index (CTI), is a steady state wetness index. It is commonly used to quantify topographic control on hydrological processes (see metadata for more information). The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	

Order	Indicator_Name	Туре	Component	Description	Field_Name
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				The percent area of the HUC12 boundary that is within the Riparian Zone* and	
				classified as natural cover (excluding urban and agriculture) by the 2006 National	
				Land Cover Database. N-index land cover classifications include 'Barren Land	
				(Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code	
				42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code	
				71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95).	
				Source data used was NLCD2006 version 1, downloaded February 2011 (see	
				metadata for more information). N-index is consistent with the Analytical Tools	
				Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be	
				found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more	
				information) is determined using grid analysis to combine surface water features	
				from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is	
				placed around these features. The combination of these two datasets and all cells	
			RZ -Corridor Natural	with a distance of 108 meters or less from surface water are included in the Riparian	
66	% Natural Cover, N-index (2006) in Riparian Zone	Ecological	Condition	Zone (RZ).	N INDEX NLCD06 PCT RZ
	, , , , , , , , , , , , , , , , , , , ,				1 11 1 _
				The percent area of the HUC12 boundary that is within the Riparian Zone* and	
				classified as natural cover (excluding barren, urban and agriculture) by the 2006	
				National Land Cover Database. N-index 2 land cover classifications include 'Deciduous	
				Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43),	
				'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code	
				90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was	
				NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S.,	
				Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see	
				metadata for more information). N-index 2 was modified from the Analytical Tools	
				Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be	
				found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4	
				WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more	
				information) is determined using grid analysis to combine surface water features	
				from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is	
			D7 Camidan Nati	placed around these features. The combination of these two datasets and all cells	
67	% Natural Cover, N-index 2 (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	N INDEX2 NLCD06 PCT RZ
07	70 Ivatural Cover, IV-Iliuex 2 (2000) III Riparian 20119	LCUIUGICAI	Condition	Lone (n2).	IN_INDLX2_NLCDUO_PCI_R2
				The percent of the HUC12 that is within the Riparian Zone* and classified as wetlands	
				by the 2006 National Land Cover Database. Wetland land cover classifications include	
				'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source	
				data used was NLCD2006 version 1, downloaded February 2011 (see metadata for	
				more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ,	
				see metadata for more information) is determined using grid analysis to combine	
				surface water features from NLCD2006 and NHD Plus version 2; then an approximate	
				100 meter buffer is placed around these features. The combination of these two	
			RZ -Corridor Natural	datasets and all cells with a distance of 108 meters or less from surface water are	
68	% Wetlands (2006) in Riparian Zone	Ecological	Condition	included in the Riparian Zone (RZ).	WETLANDS_NLCD06_PCT_RZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
69	% Woody Wetlands (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as 'Woody Wetlands' (code 90) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	LC90 NLCD06 PCT RZ
70	% Emergent Herbaceous Wetlands (2006) in RZ	Ecological	RZ -Corridor Natural Condition	The percent area of the HUC12 boundary that is within the Riparian Zone* and classified as 'Emergent Herbaceous Wetlands' (code 95) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	LC95_NLCD06_PCT_RZ
71	% Woody Vegetation (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent of the HUC12 that is within the Riparian Zone* and classified with woody vegetation cover by the 2006 National Land Cover Database. Woody vegetation cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	WOODY_NLCD06_PCT_RZ
72	% Forest (2006) in Riparian Zone	Ecological	RZ -Corridor Natural Condition	The percent of the HUC12 that is within the Riparian Zone* and classified with forest cover by the 2006 National Land Cover Database. Forest cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), and 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	FOREST_NLCD06_PCT_RZ

Standard deviation value of Computed Topographic Index (wetness)* in a HUC12.  Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO  Version 1, October 2013. *The Wetness Index (see metadata for more information) is a Computed Topographic Index (CTI) derived from the NHD Plus flow accumulation and slope of the DEM using the equation: grid wet_ndx = 100*(In (flow accumulation/tan(slope)) + 3x3 mean of In (flow accumulation/tan(slope))/2. This Hydrology Flow & information was used to identify areas in the landscape likely to be wet. Values	Order	Indicator_Name	Туре	Component	Description	Field_Name
classified as SMLVScrub (code \$23 by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloader February 2013 (see metadata for more information). Region 4 WSIO Version 1, October 2013. "The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combined for three buffers is placed around these features. The Condition of the Shrub/Scrub (2006) in Riparian Zone  R2 - Corridor Natural an approximate 100 meters buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less or combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less to combination of these two datasets and all cells with a distance of 108 meters or less or combination of these two datasets and all cells with a distance of 108 meters or less or combination of these two datasets and all cells with a distance of 108 meters or less or combination of these two datasets and all cells with a distance of 108 meters or less or combinati					The percent area of the HIIC12 houndary that is within the Dinarian Zone* and	
Source data used was NLCD2000 sersion 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, 0ctober 2013. "The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface features from LUC2005 and NHD Pilus version 2, then an approximate 100 meter buffer is placed around these features. The Commission of these two distances and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).  The percent area of the MLC12 boundary that is within the Riparian Zone and classified as "Grassland/Fehraceous" (code 71) by the 2006 National Land Cover Opatabase. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, Cottober 2013. "The Riparian Zone (RZ).  The percent area of the MLC12 boundary that is within the Riparian Zone and classified as "Grassland/Fehraceous" (code 71) by the 2006 National Land Cover Opatabase. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, Cottober 2013. "The Riparian Zone (RZ).  The percent area of the MLC12 boundary that is within the Riparian Zone (RZ).  The percent area of the MLC12 boundary that is within the Riparian Zone (RZ).  The Riparian Zone (RZ) see metadata for more information) is a commission of these two features. The Riparian Zone (RZ).  Wean value of Computed Topographic Index (wetness)* in a HUC12. Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information) is a Computed Topographic Index (Wetness)* with the Riparian Zone (RZ).  The Vetness Index (see metadata for more information) is a Computed Topographic Index (Wetness)* in a HUC12. Source data used was flow accumulation frained from the NHD Plus flow accumulation and slope of the DEM signs the equation: gird vet, and we flow accumulation and slope of the DEM signs ar					· · · · · · · · · · · · · · · · · · ·	
metadata for more information). Region 4 WSIO Version 1, October 2013. *The Rigarian Zone (RZ. combine surface water features from NLCD2005 and NHD Plux version 2; then an approximate of an approximate of anough these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ.)  **Shrub/Scrub (2006) in Riparian Zone **Ecological**  **The percent area of the HUC12 boundary that is within the Riparian Zone* and classified all 'Grassland/Herbaceous' (code 71) by the 2006 National Land Cover Database. Source data were short CUD006-were formative). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ. see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ. see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meters from the formation of the endough of the Riparian Zone (RZ. see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meters from the Plus version 2; then an approximate 100 meters for the Plus version 2; then an approximate 100 meters for the Plus version 2; downloaded October 23, 2012 (see metadata for more information) is determined from NHD Plus version 3., downloaded October 31, 2012 (see metadata for more information) is a Computed Topographic Index (Wetness)* in a HUC12. Source data used was file accumulation determined from HHD Plus Version 1, October 2013. "The Wetness Index (see metadata for more information) is a Computed Topographic Index (Wetness)* in a HUC12. Source data used was file accumulation determined from the NHD Plus flow accumulation and slope of the DEM using the equation; grid were, risk = 100 (File (Time Accumulation)) is a Computed Topographic Index (Wetness)* in a HUC12. Source data used was flow accumulation deter						
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% Grassland/Herbaceous (2006) in Riparian Zone   Ecological   Condition   From surface water are included in the Riparian Zone (RZ).   LC71_NLCD06_PCT_RZ					then an approximate 100 meter buffer is placed around these features. The	
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Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Wetness Index (see metadata for more information) is a Computed Topographic Index (CTI) derived from the NHD Plus flow accumulation and slope of the DEM using the equation: grid wet_ndx = 100*(In (flow accumulation/tan(slope)) + 3x3 mean of In (flow accumulation/tan(slope))/2. This information was used to identify areas in the landscape likely to be wet. Values	75	Computed Topographic Index (Wetness) Mean WS	Ecological	, ,,	used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Wetness Index (see metadata for more information) is a Computed Topographic Index (CTI) derived from the NHD Plus flow accumulation and slope of the DEM using the equation: grid wet_ndx = 100*(In (flow accumulation/tan(slope)) + 3x3 mean of In (flow accumulation/tan(slope))/2. This information was used to identify areas in the landscape likely to be wet. Values	COMPUTED_TOPO_INDEX_MEAN_WS
Computed Topographic Index Standard Deviation WS   Ecological   Channel   greater than 800 have been determined to represent areas which are usually wet.   COMPUTED_TOPO_INDEX_STD_WS				Hydrology Flow &	Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Wetness Index (see metadata for more information) is a Computed Topographic Index (CTI) derived from the NHD Plus flow accumulation and slope of the DEM using the equation: grid wet_ndx = 100*(In (flow accumulation/tan(slope)) + 3x3 mean of In (flow accumulation/tan(slope))/2. This information was used to identify areas in the landscape likely to be wet. Values	

Order	Indicator_Name	Туре	Component	Description	Field_Name
				Sum of all values of Computed Topographic Index (wetness)* in a HUC12. Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Wetness Index (see metadata for more information) is a	
			Hydrology Flow &	Computed Topographic Index (CTI) derived from the NHD Plus flow accumulation and slope of the DEM using the equation: grid wet_ndx = $100*(ln (flow accumulation/tan(slope)) + 3x3 mean of ln (flow accumulation/tan(slope))/2. This information was used to identify areas in the landscape likely to be wet. Values$	
77	Computed Topographic Index (Wetness) Sum WS	Ecological	Channel	greater than 800 have been determined to represent areas which are usually wet.  The mean value of flow accumulation (upstream pixels) in a HUC12. Source data used	COMPUTED_TOPO_INDEX_SUM_WS
78	Flow Accumulation (Max Upstream Pixels) Mean WS	Ecological	Hydrology Flow & Channel	was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	FLOW_ACCUMULATION_MEAN_WS
			Hydrology Flow &	The standard deviation value of flow accumulation (upstream pixels) in a HUC12.  Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO	
79	Flow Accum (Max US Pixels) Standard Deviation WS	Ecological	Channel	Version 1, October 2013.	FLOW_ACCUMULATION_STD_WS
80	Flow Accumulation (Max Upstream Pixels) Sum WS	Ecological	Hydrology Flow & Channel	The sum of all flow accumulation (upstream pixels) values in a HUC12. Source data used was flow accumulation determined from NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	FLOW_ACCUMULATION_SUM_WS
81	% of HUC12 that drains to 1st Order Streams	Ecological	Hydrology Flow & Channel	The percent of the HUC12 that drains to 1st order streams. Catchment stream order was identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	STREAM ORDER 1 PCT WS
82	% of HUC12 that drains to 2nd Order Streams	Ecological	Hydrology Flow & Channel	The percent of the HUC12 that drains to 2nd order streams. Catchment stream order was identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	STREAM ORDER 2 PCT WS
83	% of HUC12 that drains to 3rd Order Streams	Ecological	Hydrology Flow &	The percent of the HUC12 that drains to 3rd order streams. Catchment stream order was identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	STREAM ORDER 3 PCT WS
03	70 OF FIGURE CHARLASTER STUDING SCHEAMS	LCUIUGICAI	Chainei	Incklout + MASIO ACISION T' OCTOBEL 5013.	STREAM_ORDER_3_FCI_W3

Order	Indicator_Name	Туре	Component	Description	Field_Name
				The percent of a HUC12 that is part of the 2001 National Ecological Framework (NEF)*. The NEF is comprised of Hubs and Corridors. In the NEF, Hubs are defined as Priority Ecological Areas that are greater than 5,000 acres in size. Corridors are defined as linkages between Hubs and were determined using a cost surface analysis to determine the least human disturbance pathway between individual Hubs. Region 4 WSIO Version 1, October 2013. *The National Ecological Framework (NEF, see metadata for more information) is a GIS based model of the connectivity of natural	
				landscapes in the lower 48 United States. It was developed to provide a guide for the	
			Aquatic Condition /	protection of the natural ecosystem processes that give us clean air, pure water and	
84	% NEF2001, National Ecological Framework, WS	Ecological	Connectivity	protected lands that are part of EPA's mission to protect.	NEF2001_PCT_WS
			Aquatic Condition /	The percent of a HUC12 that is categorized as a Hub by the 2001 National Ecological Framework (NEF)*. In the NEF Hubs are defined as Priority Ecological Areas that are greater than 5,000 acres in size. Region 4 WSIO Version 1, October 2013. *The National Ecological Framework (NEF, see metadata for more information) is a GIS based model of the connectivity of natural landscapes in the lower 48 United States. It was developed to provide a guide for the protection of the natural ecosystem processes that give us clean air, pure water and protected lands that are part of EPA's	
85	% HUBS, National Ecological Framework 2001, WS	Ecological	Connectivity	, , , , , , , , , , , , , , , , , , , ,	HUBS_NEF2001_PCT_WS
86	% CORRIDORS, National Ecological Framework2001, WS	Ecological	Aquatic Condition /	The percent of a HUC12 that is categorized as a Corridor by the 2001 National Ecological Framework (NEF)*. In the NEF Corridors are defined as linkages between Hubs (Priority Ecological Areas greater than 5,000 acres). Corridors were determined using a cost surface analysis to determine the least human disturbance pathway between individual Hubs. Region 4 WSIO Version 1, October 2013. *The National Ecological Framework (NEF, see metadata for more information) is a GIS based model of the connectivity of natural landscapes in the lower 48 United States. It was developed to provide a guide for the protection of the natural ecosystem processes that give us clean air, pure water and protected lands that are part of EPA's mission to protect.	CORRIDORS NEF2001 PCT WS
60	70 CONNIDONS, NATIONAL ECOLOGICAL FLAMEWORK 2001, WS	LCUIOGICAI	Aquatic Condition /	The percent of a HUC12 that are auxiliary areas to the National Ecological Framework (NEF)*. Auxiliary Areas are defined as natural land cover that are contiguous to the NEF. Region 4 WSIO Version 1, October 2013. *The National Ecological Framework (NEF, see metadata for more information) is a GIS based model of the connectivity of natural landscapes in the lower 48 United States. It was developed to provide a guide for the protection of the natural ecosystem processes that give us clean air, pure	
87	% Auxiliary Areas, NEF 2001, WS	Ecological	Connectivity	water and protected lands that are part of EPA's mission to protect.	AUXAREA_NEF2001_PCT_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
					_
				The percent of the HUC12 that is classified as natural cover, not urban or agricultural,	
				(N-index) and contiguous to water (as identified by the Water Mask*) in the	
				watershed. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)'	
				(code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest'	
				(code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody	
				Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data	
				used was NLCD2006 version 1, downloaded February 2011 (see metadata for more	
				information). N-index is consistent with the Analytical Tools Interface for Landscape	
				Assessments (ATTILA) version 2004. ATTILA user guide can be found here:	
				http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version	
				1, October 2013. *The Water Mask (see metadata for more information) is	
			Aquatic Condition /	determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The combination of these two datasets represents surface water	
88	% N-Index06 Contiguous H2O, in Watershed	Ecological	Connectivity	and is referred to as the Water Mask.	N INDEX 06 CON H2O PCT WS
00	78 N-IIIuexoo Contiguous 1120, iii watersheu	LCOlogical	Connectivity	and is referred to as the water wask.	N_INDEX_00_CON_IIZO_FCI_W3
				The percent of HUC12 stream length contiguous to (flow through) zero percent	
				impervious cover. Source data used was NLCD2006 version 1 (see metadata for more	
				information) and NHD Plus Version 2 (http://www.horizon-	
				systems.com/NHDPlus/NHDPlusV2 home.php). Reference: Wickham, J. D.; Wade, T.	
				G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to	
			Aquatic Condition /	stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region	
89	% of Stream length contiguous to 2006 IC = 0% WS	Ecological	Connectivity	4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_0_PC_WS
	- Grand Gran			, , , , , , , , , , , , , , , , , , , ,	
				The percent of HUC12 stream length contiguous to (flow through) impervious cover	
				greater than zero percent and less than 5 percent (0% < IC < 5%). Source data used	
				was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version	
				2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference:	
				Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed	
			Aquatic Condition /	impervious cover relative to stream location; Ecological Indicators; Volume 40, May	
90	% Stream Igth contiguous 2006 IC; 0% < IC < 5% WS	Ecological	Connectivity	2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_0_5PC_WS
				The percent of HUC12 lake shore length within 30m of zero percent impervious	
				cover. Source data used was NLCD2006 version 1 (see metadata for more	
				information) and NHD Plus Version 2 (http://www.horizon-	
				systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T.	
				G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to	
			Aquatic Condition /	stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region	
91	% of Lake Shore Lgth within 30 m of 2006 IC =0% WS	Ecological	Connectivity	4 WSIO Version 1, October 2013.	LAKE_SHORE_PC_2006_IC_0_PC_WS
				The percent of HUC12 lake shore length within 30m of impervious cover greater than	
				zero percent and less than 5 percent (0% < IC < 5%). Source data used was NLCD2006	
				version 1 (see metadata for more information) and NHD Plus Version 2	
				(http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference:	
			Association Co. 1999 1	Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed	
02	0/ Laka Shara Lath within 20 no 2005 IS:00/ dG :50/ MS	Foologies	Aquatic Condition /	impervious cover relative to stream location; Ecological Indicators; Volume 40, May	LAKE CHORE DC 200C IC O EDC WG
92	% Lake Shore Lgth within 30 m, 2006 IC;0% <ic<5% td="" ws<=""><td>Ecological</td><td>Connectivity</td><td>2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.</td><td>LAKE_SHORE_PC_2006_IC_0_5PC_WS</td></ic<5%>	Ecological	Connectivity	2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	LAKE_SHORE_PC_2006_IC_0_5PC_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
93	% Natural Cover Change,N-Index Chng 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in natural land cover classifications, not urban or agriculture, (N-index) from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	N_INDEX_CHG_2001_06_PCT_WS
94	% Natural Cover Change,N-Index 2 Chng 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in natural land cover classifications (not barren, urban, or agriculture; N-index 2) from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	N_INDEX2_CHG_2001_06_PCT_WS
95	% Wetlands Change 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in wetland land cover classifications from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	WETLAND_CHG_2001_06_PCT_WS
96	% Forest Change 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in forest land cover classifications from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Forest land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	FOREST_CHG_2001_06_PCT_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
97	% Woody Vegetation Change 2001-06 WS	Ecological	WS -Ecological History	The percent of HUC12 change in woody vegetation land cover classifications from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Woody vegetation land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	WOODY_CHG_2001_06_PCT_WS
98	% Natural Cover Change,N-Index Chng 2001-06 HCZ	Ecological	HCZ -Ecological History	The percent of HUC12 change in natural land cover classifications, not urban or agriculture, (N-index) within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	N_INDEX_CHG_2001_06_PCT_HZ
99	% Natural Cover Change,N-Index 2 Chng 2001-06 HCZ	Ecological	HCZ -Ecological History	The percent of HUC12 change in natural land cover classifications (not barren, urban, or agriculture; N-index 2) within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	N_INDEX2_CHG_2001_06_PCT_HZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
			HCZ -Ecological	The percent of HUC12 change in wetland land cover classifications within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Wetland land cover classifications include 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected	
100	% Wetlands Change 2001-06 HCZ	Ecological	History	Zone (HCZ).	WETLAND_CHG_2001_06_PCT_HZ
101	% Forest Change 2001-06 HCZ	Ecological	HCZ -Ecological History	The percent of HUC12 change in forest land cover classifications within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Forest land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	FOREST_CHG_2001_06_PCT_HZ
102	% Woody Vegetation Change 2001-06 HCZ	Ecological	HCZ -Ecological History	The percent of HUC12 change in woody vegetation land cover classifications within the Hydrologically Connected Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Woody vegetation land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	WOODY_CHG_2001_06_PCT_HZ

Indicator_Name	Туре	Component	Description	Field_Name
		RZ -Ecological	The percent of HUC12 change in natural land cover classifications, not urban or agriculture, (N-index) within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index land cover classifications include 'Barren Land (Rock/Sand/Clay)' (code 31), 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian	
		RZ -Ecological	with a distance of 108 meters or less from surface water are included in the Riparian	
% Natural Cover Change,N-Index Chng 2001-06 RZ	Ecological	History	Zone (RZ).	N_INDEX_CHG_2001_06_PCT_RZ
		RZ -Ecological	The percent of HUC12 change in natural land cover classifications (not barren, urban, or agriculture; N-index 2) within the Riparian Zone*. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), 'Grassland/Herbaceous' (code 71), 'Woody Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (see metadata for more information). N-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of	
% Natural Cover Change.N-Index 2 Chng 2001-06 RZ	Ecological			N INDEX2 CHG 2001 06 PCT RZ
		% Natural Cover Change,N-Index Chng 2001-06 RZ Ecological	% Natural Cover Change, N-Index Chng 2001-06 RZ Ecological History	The percent of HUC12 change in natural land cover classifications, not urban or agriculture, (Nuclear Within the Raprian? Zone**. Change was determined by comparing the 2010 Rational Land Cover Change Datasets; version 1. Nindex land cover classifications include 'Barren Land (Rock/Sand/Clay)' (Code 31), 'Decidious Forrest' (Code 43), 'Shrub/Scrub' (Code 52), 'Grassland/Herbaceous' (Code 47), 'Woody Wetlands' (Code 90), and 'Emergent Heacous Wetlands' (Code 93), Out of Substance and at used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, 1, Xian, G., Jin, S., Dewtz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011 (See metadata for more information). N-index so consistent with the Analytical Tools Interface for Landscape Assessments (ATILA) version 2004. ATILA user guide can be found here: http://www.apa.gov/ess/flands-citatila/pd/User_guide-pdf. Region 4 WSIO Version 1, October 2013. "The Riparian Zone (Rz. see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NIND Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water real included in the Riparian Zone (Rz).  The percent of HUC12 change in natural land cover classifications (not barren, urban, or agriculture; N-index 2) within the Riparian Zone. "Change Datasets, version 1. N-index 2 land cover classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forrest' (code 43), 'Medican Code 53, 'Grassland/Herbaceous' (code 21), 'Woody Wetlands' (code 90), and 'Beregnet Herbaceous' (code 25), 'Grassland/Herbaceous' (code 25), 'Grassland/Herbaceous' (code 41), 'Evergreen Forrest' (code 43), 'Medican Forest' (code 43), 'Homer, C., Yang, L., Barnes, C., Hode Forest' (code 43), 'Noody Wetlands' (code 90), and 'Beregnet Herbaceous' (code 95), ource data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry,

Order	Indicator_Name	Туре	Component	Description	Field_Name
			-	·	_
				The percent of HUC12 change in wetland land cover classifications within the Riparian	
				Zone*. Change was determined by comparing the 2001 and 2006 National Land	
				Cover Change Datasets; version 1. Wetland land cover classifications include 'Woody	
				Wetlands' (code 90), and 'Emergent Herbaceous Wetlands' (code 95). Source data	
				used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G.,	
				Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011	
				(see metadata for more information). Region 4 WSIO Version 1, October 2013. *The	
				Riparian Zone (RZ, see metadata for more information) is determined using grid	
				analysis to combine surface water features from NLCD2006 and NHD Plus version 2;	
				then an approximate 100 meter buffer is placed around these features. The	
			RZ -Ecological	combination of these two datasets and all cells with a distance of 108 meters or less	
105	% Wetlands Change 2001-06 RZ	Ecological	History	from surface water are included in the Riparian Zone (RZ).	WETLAND_CHG_2001_06_PCT_RZ
				The percent of HUC12 change in forest land cover classifications within the Riparian	
		1	1	Zone*. Change was determined by comparing the 2001 and 2006 National Land	
		1		Cover Change Datasets; version 1. Forest land cover classifications include 'Deciduous	
		1	1	Forrest' (code 41), 'Evergreen Forest' (code 42), 'Mixed Forest' (code 43). Source data	
				used was NLCD2006 version 1, downloaded February 2011. Citation: Fry, J., Xian, G.,	
				Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011	
				(see metadata for more information). Region 4 WSIO Version 1, October 2013. *The	
				Riparian Zone (RZ, see metadata for more information) is determined using grid	
				analysis to combine surface water features from NLCD2006 and NHD Plus version 2;	
				then an approximate 100 meter buffer is placed around these features. The	
			RZ -Ecological	combination of these two datasets and all cells with a distance of 108 meters or less	
106	% Forest Change 2001-06 RZ	Ecological	History	from surface water are included in the Riparian Zone (RZ).	FOREST_CHG_2001_06_PCT_RZ
200	70 Forest Ghange 2001 of N2			non-surface water are mediated in the imparion zone (i.z.)	
				The percent of HUC12 change in woody vegetation land cover classifications within	
				the Riparian Zone*. Change was determined by comparing the 2001 and 2006	
				National Land Cover Change Datasets; version 1. Woody vegetation land cover	
		1		classifications include 'Deciduous Forrest' (code 41), 'Evergreen Forest' (code 42),	
				'Mixed Forest' (code 43), 'Shrub/Scrub' (code 52), and 'Woody Wetlands' (code 90).	
		1	1	Source data used was NLCD2006 version 1, downloaded February 2011. Citation: Fry,	
		1		J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham,	
		1		J., 2011 (see metadata for more information). Region 4 WSIO Version 1, October	
		1	1	2013. *The Riparian Zone (RZ, see metadata for more information) is determined	
		1		using grid analysis to combine surface water features from NLCD2006 and NHD Plus	
				version 2; then an approximate 100 meter buffer is placed around these features.	
		1	RZ -Ecological	The combination of these two datasets and all cells with a distance of 108 meters or	
107	% Woody Vegetation Change 2001-06 RZ	Ecological	History	less from surface water are included in the Riparian Zone (RZ).	WOODY_CHG_2001_06_PCT_RZ
				The median empower density* value in a HUC12 area per year. *Empower density is	
		1	1	the non-renewable emergy flow through a watershed. Source data used was	
		1	Watershed	NLCD2006 version 1, downloaded February 2011 (see metadata for more	
108	Empower Density 2001, Median Value in Watershed	Stressor	Disturbance	information). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEDIAN_WS
		1		The mean empower density* value of a HUC12 area per year. *Empower density is	
		1		the non-renewable emergy flow through a watershed. Source data used was	
		1	Watershed	NLCD2006 version 1, downloaded February 2011 (see metadata for more	
109	Empower Density 2001, Mean Value in Watershed	Stressor	Disturbance	information). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEAN_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
				The standard deviation empower density* values in a HUC12 area per year.	
				*Empower density is the non-renewable emergy flow through a watershed. Source	
			Watershed	data used was NLCD2006 version 1, downloaded February 2011 (see metadata for	
110	Empower Density 2001, Standard Deviation Values WS	Stressor	Disturbance	more information). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_STD_WS
				The sum of empower density* values in a HUC12 area per year. *Empower density is	
				the non-renewable emergy flow through a watershed. Source data used was	
	5 7 2004 6 6 6 4 4 5 1 4 5	<u>.</u>	Watershed	NLCD2006 version 1, downloaded February 2011 (see metadata for more	ENADOMED DENSITY 2004 SUBA MS
111	Empower Density 2001, Sum of Values in Watershed	Stressor	Disturbance	information). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_SUM_WS
			Mataush ad	The median value of percent imperviousness in a HUC12. Source data used was the	
112	Of Iranamia concerns Of Madian Value of Matarahad	Chunnan	Watershed	National Land Cover Database (NLCD) 2006 version 1 (see metadata for more	DCT INADEDVIOLICNIESS MEDIANI VAS
112	% Imperviousness06, Median Value of Watershed	Stressor	Disturbance	information). Region 4 WSIO Version 1, October 2013.	PCT_IMPERVIOUSNESS_MEDIAN_WS
			Watershed	The mean value of percent imperviousness in a HUC12. Source data used was the National Land Cover Database (NLCD) 2006 version 1 (see metadata for more	
112	9/ Impersiousness OF Mean Value of Watershed	Strassor		, , ,	DCT IMPERVIOUSNESS MEAN MS
113	% Imperviousness06, Mean Value of Watershed	Stressor	Disturbance	information). Region 4 WSIO Version 1, October 2013.	PCT_IMPERVIOUSNESS_MEAN_WS
				The standard deviation value of negroup incoming and a UUC12 Course date	
			Watershed	The standard deviation value of percent imperviousness in a HUC12. Source data	
114	% Imperviousness06, Standard Deviation, Watershed	Stressor	Disturbance	used was the National Land Cover Database (NLCD) 2006 version 1 (see metadata for more information). Region 4 WSIO Version 1, October 2013.	PCT IMPERVIOUSNESS STD WS
114	% imperviousnessoo, standard Deviation, watersned	30162201	Disturbance	The sum of all percent imperviousness values in a HUC12. Source data used was the	PCI_IMPERVIOUSNESS_STD_WS
			Watershed	National Land Cover Database (NLCD) 2006 version 1 (see metadata for more	
115	% Imperviousness06, Sum of Values in Watershed	Stressor	Disturbance	information). Region 4 WSIO Version 1, October 2013.	PCT_IMPERVIOUSNESS_SUM_WS
113	76 Imperviousnessoo, Sum of Values in Watersheu	3(16330)	Disturbance	information). Region 4 W310 Version 1, October 2013.	FCI_INIFERVIOUSINESS_SUIVI_WS
				The percent of HUC12 with ≥ 5% impervious cover (IC). Equation: (Sum of IC pixels ≥	
				5% /All HUC12 pixels) x 100. Source data used was NLCD2006 version 1 (see	
				metadata for more information). Reference: Wickham, J. D.; Wade, T. G.; Norton, D.	
				J.; 2014; Spatial patterns of watershed impervious cover relative to stream location;	
			Watershed	Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version	
116	Impervious Cover (2006) IC ≥ 5%, PCT of Watershed	Stressor	Disturbance	1, October 2013.	IC 2006 GE 5PCT PCT WS
110	Impervious cover (2000) to 2 5%, the for watershed	511 (3301	Distarbance	1, 00:000: 2013.	16_2000_GE_51 C1_1 C1_W5
				The percent of HUC12 with ≥ 15% impervious cover (IC). Equation: (Sum of IC pixels ≥	
				15% /All HUC12 pixels) x 100. Source data used was NLCD2006 version 1 (see	
				metadata for more information). Reference: Wickham, J. D.; Wade, T. G.; Norton, D.	
				J.; 2014; Spatial patterns of watershed impervious cover relative to stream location;	
			Watershed	Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version	
117	Impervious Cover (2006) IC ≥ 15%, PCT of Watershed	Stressor	Disturbance	1, October 2013.	IC 2006 GE 15PCT PCT WS
		01.0350.	2.500.00.00	2) 500000 2020	
				The percent of the HUC12 that is agricultural or urban. U-index cover classifications	
				include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22),	
				'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24),	
				'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land	
				Cover Database. Source data used was NLCD2006 version 1, downloaded February	
				2011 (see metadata for more information). U-index is consistent with the Analytical	
				Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide	
			Watershed	can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf.	
118	% Human Use, U-index (2006) in Watershed	Stressor	Disturbance	Region 4 WSIO Version 1, October 2013.	U INDEX NLCD06 PCT WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
				The percent of the HUC12 that is barren, agricultural or urban. U-index 2 cover	
				classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity'	
				(code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code	
				24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and	
				'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data	
				used was NLCD2006 version 1, downloaded February 2011 (see metadata for more	
				information. U-index 2 was modified from the Analytical Tools Interface for	
				Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here:	
			Watershed	http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version	
119	% Human Use, U-index 2 (2006) in Watershed	Stressor	Disturbance	1, October 2013.	U_INDEX2_NLCD06_PCT_WS
				The percent of the HUC12 classified as urban by the 2006 National Land Cover	
				Database. Urban land cover classifications include 'Developed, Open Space' (code 21),	
				'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23),	
				'Developed, High Intensity' (code 24). Source data used was NLCD2006 version 1,	
			Watershed	downloaded February 2011 (see metadata for more information). Region 4 WSIO	
120	% Urban (2006) in Watershed	Stressor	Disturbance	Version 1, October 2013.	URBAN_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Developed, Open Space' (code	
				21) by the 2006 National Land Cover Database. Source data used was NLCD2006	
			Watershed	version 1, downloaded February 2011 (see metadata for more information). Region 4	
121	% Developed, Open Space (2006) in Watershed	Stressor	Disturbance	WSIO Version 1, October 2013.	LC21_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Developed, Low Intensity' (code	
				22) by the 2006 National Land Cover Database. Source data used was NLCD2006	
			Watershed	version 1, downloaded February 2011 (see metadata for more information). Region 4	
122	% Developed, Low intensity (2006) in Watershed	Stressor	Disturbance	WSIO Version 1, October 2013.	LC22_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Developed, Medium Intensity'	
				(code 23) by the 2006 National Land Cover Database. Source data used was	
			Watershed	NLCD2006 version 1, downloaded February 2011 (see metadata for more	
123	% Developed, Medium intensity (2006) in Watershed	Stressor	Disturbance	information). Region 4 WSIO Version 1, October 2013.	LC23_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Developed, High Intensity' (code	
				24) by the 2006 National Land Cover Database. Source data used was NLCD2006	
			Watershed	version 1, downloaded February 2011 (see metadata for more information). Region 4	
124	% Developed, High intensity (2006) in Watershed	Stressor	Disturbance	WSIO Version 1, October 2013.	LC24_NLCD06_PCT_WS
				The percent of the HUC12 classified as agriculture by the 2006 National Land Cover	
				Database. Agricultural land cover classifications include 'Pasture/Hay' (code 81), and	
				'Cultivated Crops' (code 82). Source data used was NLCD2006 version 1, downloaded	
			Watershed	February 2011 (see metadata for more information). Region 4 WSIO Version 1,	
125	% Agriculture (2006) in Watershed	Stressor	Disturbance	October 2013.	AG_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Pasture/Hay' (code 81) by the	
				2006 National Land Cover Database. Source data used was NLCD2006 version 1,	
			Watershed	downloaded February 2011 (see metadata for more information). Region 4 WSIO	
126	% Pasture/Hay (2006) in Watershed	Stressor	Disturbance	Version 1, October 2013.	LC81_NLCD06_PCT_WS
				The percent area in a HUC12 boundary classified as 'Cultivated Crops' (code 82) by	
				the 2006 National Land Cover Database. Source data used was NLCD2006 version 1,	
			Watershed	downloaded February 2011 (see metadata for more information). Region 4 WSIO	
127	% Cultivated Crops (2006) in Watershed	Stressor	Disturbance	Version 1, October 2013.	LC82_NLCD06_PCT_WS
			Watershed	Average soil erodibility (K) factor in HUC12. Calculated from the "STATSGO2" soil	
128	Watershed Mean Soil Erodibility	Stressor	Disturbance	attribute dataset.	WS_KFACTOR

Order	Indicator Name	Туре	Component	Description	Field_Name
		7,1			
				The percentage of land managed for agriculture that has hydric soils within each	
				HUC12. This includes all land dedicated to the production of crops, but excludes land	
				managed for pasture. Metadata can be found here:	
				https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B1671	
				13DA-E941-4CB3-8E93-8FE2600C08DA%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature,	
				often referred to as ecosystem services. Additional information can be found here:	
				http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
			Watershed	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
129	Percent agriculture on hydric soil WS	Stressor	Disturbance	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	AG_HYDRIC_PCT_WS
				The median road density (mi/sqmi) value in a HUC12. Source data used was 2003	
			Watershed	ESRI Streetmap (See metadata for more information). Region 4 WSIO Version 1,	
130	Road Density 2003, Median Value (mi /sq mi) WS	Stressor	Disturbance	October 2013.	ROAD_DENSITY_2003_MEDIAN_WS
				The mean road density (mi/sqmi) value in a HUC12. Source data used was 2003 ESRI	
			Watershed	Streetmap (See metadata for more information). Region 4 WSIO Version 1, October	
131	Road Density 2003, Mean Value (mi /sq mi) WS	Stressor	Disturbance	2013.	ROAD_DENSITY_2003_MEAN_WS
			Watershed	The standard deviation road density (mi/sqmi) value in a HUC12. Source data used	
132	Road Density 2003, Standard Deviation (mi /sq mi) WS	Stressor	Disturbance	was 2003 ESRI Streetmap. Region 4 WSIO Version 1, October 2013.	ROAD_DENSITY_2003_STD_WS
				The sum of all road density (mi/sqmi) values in a HUC12. Source data used was 2003	
			Watershed	ESRI Streetmap (See metadata for more information). Region 4 WSIO Version 1,	
133	Road Density 2003, Sum of Values (mi /sq mi) in WS	Stressor	Disturbance	October 2013.	ROAD_DENSITY_2003_SUM_WS
				The mean empower density value that occurs in the *Hydrologically Connected Zone	
				of a HUC12 per year. Empower density is the non-renewable emergy flow through a	
				watershed. *The Hydrologically Connected Zone (HCZ, see metadata for more	
				information) is determined using grid analysis to combine surface water features of	
				three datasets. First, the surface water features from the 2006 National Land Cover	
				Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands'	
				(code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was the	
				NLCD2006 version 1 (see metadata for more information). Second, the flowline and	
				waterbody features as represented in the catseed grid from the National	
				Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version	
				2.1, downloaded October 31, 2012 (see metadata for more information). The	
				combination of these two datasets represents surface water and is referred to as the	
				'Water Mask' (see metadata for more information). Third, all areas contiguous to	
				surface water that also has a wetness index value of 550 or greater. The wetness	
				index, also known as the compound topographic index (CTI), is a steady state wetness	
				index. It is commonly used to quantify topographic control on hydrological processes	
				(see metadata for more information). The combination of these three datasets	
			HCZ -Corridor	represents the Hydrologically Connected Zone (HCZ). Region 4 WSIO Version 1,	
134	Empower Density 2001, Mean Value in HCZ	Stressor	Disturbance	October 2013.	EMPOWER_DENSITY_2001_MEAN_HZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
					_
				The median empower density value that occurs in the *Hydrologically Connected	
				Zone of a HUC12 per year. Empower density is the non-renewable emergy flow	
				through a watershed. The Hydrologically Connected Zone (HCZ, see metadata for	
				more information) is determined using grid analysis to combine surface water	
				features of three datasets. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody	
				Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data	
				used was the NLCD2006 version 1 (see metadata for more information). Second, the	
				flowline and waterbody features as represented in the catseed grid from the National	
				Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version	
				2.1, downloaded October 31, 2012 (see metadata for more information). The	
				combination of these two datasets represents surface water and is referred to as the	
				'Water Mask' (see metadata for more information). Third, all areas contiguous to	
				surface water that also has a wetness index value of 550 or greater. The wetness	
				index, also known as the compound topographic index (CTI), is a steady state wetness	
				index. It is commonly used to quantify topographic control on hydrological processes	
				(see metadata for more information). The combination of these three datasets	
			HCZ -Corridor	represents the Hydrologically Connected Zone (HCZ). Region 4 WSIO Version 1,	
135	Empower Density 2001, Median Value in HCZ	Stressor	Disturbance	October 2013.	EMPOWER_DENSITY_2001_MEDIAN_HZ
				The standard deviation are considerable with a standard s	
				The standard deviation empower density values that occur in the *Hydrologically Connected Zone of a HUC12 per year. Empower density is the non-renewable emergy	
				flow through a watershed. The Hydrologically Connected Zone (HCZ, see metadata	
				for more information) is determined using grid analysis to combine surface water	
				features of three datasets. First, the surface water features from the 2006 National	
				Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody	
				Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data	
				used was the NLCD2006 version 1 (see metadata for more information). Second, the	
				flowline and waterbody features as represented in the catseed grid from the National	
				Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version	
				2.1, downloaded October 31, 2012 (see metadata for more information). The	
				combination of these two datasets represents surface water and is referred to as the	
				'Water Mask' (see metadata for more information). Third, all areas contiguous to	
				surface water that also has a wetness index value of 550 or greater. The wetness	
				index, also known as the compound topographic index (CTI), is a steady state wetness	
				index. It is commonly used to quantify topographic control on hydrological processes	
				(see metadata for more information). The combination of these three datasets	
126	Formation Deposits 2004 Steen dead Deviation Value 1157	Characa	HCZ -Corridor	represents the Hydrologically Connected Zone (HCZ). Region 4 WSIO Version 1,	ENABOLAGE DENGITY 2004 CTD LIZ
136	Empower Density 2001,Standard Deviation Values HCZ	Stressor	Disturbance	October 2013.	EMPOWER_DENSITY_2001_STD_HZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
137	Empower Density 2001, Sum of Values in HCZ	Stressor	HCZ -Corridor Disturbance	The sum of empower density values that occur in the *Hydrologically Connected Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features of three datasets. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was the NLCD2006 version 1 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Third, all areas contiguous to surface water that also has a wetness index value of 550 or greater. The wetness index, also known as the compound topographic index (CTI), is a steady state wetness index. It is commonly used to quantify topographic control on hydrological processes (see metadata for more information). The combination of these three datasets represents the Hydrologically Connected Zone (HCZ). Region 4 WSIO Version 1, October 2013.	_
138	% Human Use, U-index (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as agricultural or urban. U-index cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	U INDEX NLCD06 PCT HZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
			HCZ -Corridor	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as barren, agricultural or urban. U-index 2 cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets	
139	% Human Use, U-index 2 (2006) in HCZ	Stressor	Disturbance	represents the Hydrologically Connected Zone (HCZ).	U_INDEX2_NLCD06_PCT_HZ
140	% Urban (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as urban by the 2006 National Land Cover Database. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	URBAN_NLCD06_PCT_HZ
141	% Agriculture (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent of the HUC12 that is within the Hydrologically Connected Zone* and classified as agriculture by the 2006 National Land Cover Database. Agricultural land cover classifications include 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	AG_NLCD06_PCT_HZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
142	% Pasture/Hay (2006) in HCZ	Stressor	HCZ -Corridor Disturbance	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Pasture/Hay' (code 81) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	LC81 NLCD06 PCT HZ
			HCZ -Corridor	The percent area of the HUC12 boundary that is within the Hydrologically Connected Zone* and classified as 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets	
143	% Cultivated Crops (2006) in HCZ	Stressor	Disturbance HCZ -Corridor	represents the Hydrologically Connected Zone (HCZ).  Average soil erodibility (K) factor in HCZ. Calculated from the "STATSGO2 "soil	LC82_NLCD06_PCT_HZ
144	HCZ Mean Soil Erodibility	Stressor	Disturbance	attribute dataset.	HCZ_KFACTOR
145	Road Density 2003, Median Value (mi /sq mi) HCZ	Stressor	HCZ -Corridor Disturbance	The median value for road density (mi/sq mi) of a HUC12 that is within the Hydrologically Connected Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012 (metadata can be found here: http://www.esri.com/library/whitepapers/pdfs/esri-data-and-maps.pdf); and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	ROAD_DENSITY_2003_MEDIAN_HZ
146	Read Descript 2002 Many Value (mi /cz mi) UCZ	Channel	HCZ -Corridor	The mean road density value (mi/sq mi) of a HUC12 that is within the Hydrologically Connected Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically	DOAD DENGITY 2002 MEAN 117
146	Road Density 2003, Mean Value (mi /sq mi) HCZ	Stressor	Disturbance	Connected Zone (HCZ).	ROAD_DENSITY_2003_MEAN_HZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
147	Road Density 2003,Standard Deviation(mi /sq mi)HCZ	Stressor	HCZ -Corridor Disturbance	The standard deviation road density value (mi/sq mi) of a HUC12 that is within the Hydrologically Connected Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	ROAD_DENSITY_2003_STD_HZ
148	Road Density 2003, Sum of Values (mi /sq mi) HCZ	Stressor	HCZ -Corridor Disturbance	The sum of all road density values (mi/sq mi) of a HUC12 that is within the Hydrologically Connected Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface water that also has a wetness index value of 550 or greater. The combination of these three datasets represents the Hydrologically Connected Zone (HCZ).	ROAD_DENSITY_2003_SUM_HZ
			RZ -Corridor	The median empower density value that occurs in the *Riparian Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine two surface water indicators and then place an approximate 100 meter buffer around these features. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Last, distance from surface water is calculated using the ArcMap Spatial Analyst Euclidean Distance tool. All cells with a distance of 108 meters or less are included in the riparian zone. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian	
149	Empower Density 2001, Median Value in RZ	Stressor	Disturbance	Zone (RZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEDIAN_RZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
				The mean empower density value that occurs in the *Riparian Zone of a HUC12 per	
				year. Empower density is the non-renewable emergy flow through a watershed. *The	
				Riparian Zone (RZ, see metadata for more information) is determined using grid	
				analysis to combine two surface water indicators and then place an approximate 100	
				meter buffer around these features. First, the surface water features from the 2006	
				National Land Cover Database (NLCD). Features included are 'Open Water' (code 11),	
				'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source	
				data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Second, the flowline and waterbody features as represented in	
				the catseed grid from the National Hydrography Dataset (NHD) Plus version 2.	
				Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see	
				metadata for more information). The combination of these two datasets represents	
				surface water and is referred to as the 'Water Mask' (see metadata for more	
				information). Last, distance from surface water is calculated using the ArcMap Spatial	
				Analyst Euclidean Distance tool. All cells with a distance of 108 meters or less are	
				included in the riparian zone. The combination of these two datasets and all cells	
			RZ -Corridor	with a distance of 108 meters or less from surface water are included in the Riparian	
150	Empower Density 2001, Mean Value in RZ	Stressor	Disturbance	Zone (RZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_MEAN_RZ
				The standard deviation empower density values that occur in the *Riparian Zone of a	
				HUC12 per year. Empower density is the non-renewable emergy flow through a	
				watershed. *The Riparian Zone (RZ, see metadata for more information) is	
				determined using grid analysis to combine two surface water indicators and then	
				place an approximate 100 meter buffer around these features. First, the surface	
				water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent	
				Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1,	
				downloaded February 2011 (see metadata for more information). Second, the	
				flowline and waterbody features as represented in the catseed grid from the National	
				Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version	
				2.1, downloaded October 31, 2012 (see metadata for more information). The	
				combination of these two datasets represents surface water and is referred to as the	
				'Water Mask' (see metadata for more information). Last, distance from surface water	
				is calculated using the ArcMap Spatial Analyst Euclidean Distance tool. All cells with a	
				distance of 108 meters or less are included in the riparian zone. The combination of	
			RZ -Corridor	these two datasets and all cells with a distance of 108 meters or less from surface	
151	Empower Density 2001, Standard Deviation Values RZ	Stressor	Disturbance	water are included in the Riparian Zone (RZ). Region 4 WSIO Version 1, October 2013.	EMPOWER_DENSITY_2001_STD_RZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
152	Empower Density 2001, Sum of Values in RZ	Stressor	RZ -Corridor Disturbance	The sum of empower density values that occur in the *Riparian Zone of a HUC12 per year. Empower density is the non-renewable emergy flow through a watershed. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine two surface water indicators and then place an approximate 100 meter buffer around these features. First, the surface water features from the 2006 National Land Cover Database (NLCD). Features included are 'Open Water' (code 11), 'Woody Wetlands' (code 90) and 'Emergent Herbaceous Wetlands' (code 95). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Second, the flowline and waterbody features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information). The combination of these two datasets represents surface water and is referred to as the 'Water Mask' (see metadata for more information). Last, distance from surface water is calculated using the ArcMap Spatial Analyst Euclidean Distance tool. All cells with a distance of 108 meters or less are included in the riparian zone. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ). Region 4 WSIO Version 1, October 2013.	
153	% Human Use, U-index (2006) in Riparian Zone	Stressor	RZ -Corridor Disturbance	The percent of the HUC12 that is within the Riparian Zone* and classified as agricultural or urban. U-index cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtlLA) version 2004. ATtlLA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is determined using grid analysis to combine surface water features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is placed around these features. The combination of these two datasets and all cells with a distance of 108 meters or less from surface water are included in the Riparian Zone (RZ).	U INDEX NLCD06 PCT RZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
	_	† <i>"</i>	•	·	_
				The percent of the HUC12 that is within the Riparian Zone* and classified as barren,	
				agricultural or urban. U-index 2 cover classifications include 'Developed, Open Space'	
				(code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code	
				23), 'Developed, High Intensity' (code 24), 'Barren Land (Rock/Sand/Clay)' (code 31),	
				'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land	
				Cover Database. Source data used was NLCD2006 version 1, downloaded February	
				2011 (see metadata for more information). U-index 2 was modified from the	
				Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA	
				user guide can be found here: http://www.epa.gov/esd/land-	
				sci/attila/pdf/user guide.pdf. Region 4 WSIO Version 1, October 2013. *The Riparian	
				Zone (RZ, see metadata for more information) is determined using grid analysis to	
				combine surface water features from NLCD2006 and NHD Plus version 2; then an	
				approximate 100 meter buffer is placed around these features. The combination of	
			RZ -Corridor	these two datasets and all cells with a distance of 108 meters or less from surface	
154	2/ Human Haa H inday 2 (2006) in Binarian Zana	Stressor			III INDEVA NI COCC DCT DZ
154	% Human Use, U-index 2 (2006) in Riparian Zone	Stressor	Disturbance	water are included in the Riparian Zone (RZ).	U_INDEX2_NLCD06_PCT_RZ
				The persons of the ULICAR shot is within the Disputer Zone* and described as well-	
				The percent of the HUC12 that is within the Riparian Zone* and classified as urban by	
				the 2006 National Land Cover Database. Urban land cover classifications include	
				'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed,	
				Medium Intensity' (code 23), 'Developed, High Intensity' (code 24). Source data used	
				was NLCD2006 version 1, downloaded February 2011 (see metadata for more	
				information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see	
				metadata for more information) is determined using grid analysis to combine surface	
				water features from NLCD2006 and NHD Plus version 2; then an approximate 100	
				meter buffer is placed around these features. The combination of these two datasets	
			RZ -Corridor	and all cells with a distance of 108 meters or less from surface water are included in	
155	% Urban (2006) in Riparian Zone	Stressor	Disturbance	the Riparian Zone (RZ).	URBAN_NLCD06_PCT_RZ
				The percent of the HUC12 that is within the Riparian Zone* and classified as	
				agriculture by the 2006 National Land Cover Database. Agricultural land cover	
				classifications include 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82).	
				Source data used was NLCD2006 version 1, downloaded February 2011 (see	
				metadata for more information). Region 4 WSIO Version 1, October 2013. *The	
				Riparian Zone (RZ, see metadata for more information) is determined using grid	
				analysis to combine surface water features from NLCD2006 and NHD Plus version 2;	
				then an approximate 100 meter buffer is placed around these features. The	
			RZ -Corridor	combination of these two datasets and all cells with a distance of 108 meters or less	
156	% Agriculture (2006) in Riparian Zone	Stressor	Disturbance	from surface water are included in the Riparian Zone (RZ).	AG_NLCD06_PCT_RZ
				The percent area of the HUC12 boundary that is within the Riparian Zone* and	
				classified as 'Pasture/Hay' (code 81) by the 2006 National Land Cover Database.	
				Source data used was NLCD2006 version 1, downloaded February 2011 (see	
				metadata for more information). Region 4 WSIO Version 1, October 2013. *The	
				Riparian Zone (RZ, see metadata for more information) is determined using grid	
				analysis to combine surface water features from NLCD2006 and NHD Plus version 2;	
				then an approximate 100 meter buffer is placed around these features. The	
			RZ -Corridor	combination of these two datasets and all cells with a distance of 108 meters or less	
157	% Pasture/Hay (2006) in Riparian Zone	Stressor	Disturbance	from surface water are included in the Riparian Zone (RZ).	LC81_NLCD06_PCT_RZ
137	70 rasture/riay (2000) ili Niparian Zune	20162201	Disturbance	prom surface water are included in the riparian zone (RZ).	FCQT_INFCDQQ_LCI_VZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
				The percent area of the HUC12 boundary that is within the Riparian Zone* and	
				classified as 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database.	
				Source data used was NLCD2006 version 1, downloaded February 2011 (see	
				metadata for more information). Region 4 WSIO Version 1, October 2013. *The	
				Riparian Zone (RZ, see metadata for more information) is determined using grid	
				analysis to combine surface water features from NLCD2006 and NHD Plus version 2;	
			27.0	then an approximate 100 meter buffer is placed around these features. The	
	(2000)		RZ -Corridor	combination of these two datasets and all cells with a distance of 108 meters or less	
158	% Cultivated Crops (2006) in Riparian Zone	Stressor	Disturbance	from surface water are included in the Riparian Zone (RZ).	LC82_NLCD06_PCT_RZ
				The median value for road density (mi/sq mi) of a HUC12 that is within the Riparian	
				Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and	
				NHD Plus Version 2.1 downloaded October 2012 (see metadata for more	
				information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see	
				metadata for more information) is determined using grid analysis to combine surface	
				water features from NLCD2006 and NHD Plus version 2; then an approximate 100	
			27.0	meter buffer is placed around these features. The combination of these two datasets	
			RZ -Corridor	and all cells with a distance of 108 meters or less from surface water are included in	
159	Road Density 2003, Median Value (mi /sq mi) RZ	Stressor	Disturbance	the Riparian Zone (RZ).	ROAD_DENSITY_2003_MEDIAN_RZ
				The mean read density value (mi/ca mi) of a HIIC12 that is within the Binarian Zone*	
				The mean road density value (mi/sq mi) of a HUC12 that is within the Riparian Zone*.	
				Source data used was 2010 ESRI Streetmap downloaded August 2012; and NHD Plus	
				Version 2.1 downloaded October 2012 (see metadata for more information). Region	
				4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for more	
				information) is determined using grid analysis to combine surface water features	
				from NLCD2006 and NHD Plus version 2; then an approximate 100 meter buffer is	
				placed around these features. The combination of these two datasets and all cells	
			RZ -Corridor	with a distance of 108 meters or less from surface water are included in the Riparian	
160	Road Density 2003, Mean Value (mi /sq mi) RZ	Stressor	Disturbance	Zone (RZ).	ROAD_DENSITY_2003_MEAN_RZ
				The standard deviation road density value (mi/sq mi) of a HUC12 that is within the	
				Riparian Zone*. Source data used was 2010 ESRI Streetmap downloaded August	
				1 .	
				2012; and NHD Plus Version 2.1 downloaded October 2012 (see metadata for more	
				information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see	
				metadata for more information) is determined using grid analysis to combine surface	
				water features from NLCD2006 and NHD Plus version 2; then an approximate 100	
			D7 0 11	meter buffer is placed around these features. The combination of these two datasets	
1.61	Deed Density 2002 Standard Co. 111 / 17 / 17	Chin	RZ -Corridor	and all cells with a distance of 108 meters or less from surface water are included in	DOAD DENSITY 2002 CTC DZ
161	Road Density 2003, Standard Deviation (mi /sq mi) RZ	Stressor	Disturbance	the Riparian Zone (RZ).	ROAD_DENSITY_2003_STD_RZ
				The sum of all read density values (mi/sq mi) of a HIIC12 that is within the Disease	
				The sum of all road density values (mi/sq mi) of a HUC12 that is within the Riparian	
				Zone*. Source data used was 2010 ESRI Streetmap downloaded August 2012; and	
				NHD Plus Version 2.1 downloaded October 2012 (see metadata for more	
				information). Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see	
				metadata for more information) is determined using grid analysis to combine surface	
				water features from NLCD2006 and NHD Plus version 2; then an approximate 100	
				meter buffer is placed around these features. The combination of these two datasets	
			RZ -Corridor	and all cells with a distance of 108 meters or less from surface water are included in	
162	Road Density 2003, Sum of Values (mi /sq mi) in RZ	Stressor	Disturbance	the Riparian Zone (RZ).	ROAD_DENSITY_2003_SUM_RZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
163	Proximity of 2006 IC ≥ 5% to water WS	Stressor	Hydrologic Alteration	The proximity of impervious cover (IC) that is greater than or equal to 5 percent to water. The more proximal IC is to streams causes a higher value in this metric. 'Water' includes streams, lakes and reservoirs as defined by the National Hydrography Dataset. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizonsystems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	PROX_WATER_2006_IC_GE5_PC_WS
164	Proximity of 2006 IC ≥ 15% to water WS	Stressor	Hydrologic Alteration	The proximity of impervious cover (IC) that is greater than or equal to 15 percent to water. The more proximal IC is to streams causes a higher value in this metric. 'Water' includes streams, lakes and reservoirs as defined by the National Hydrography Dataset. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizonsystems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	PROX_WATER_2006_IC_GE15_PC_WS
165	% Water, 2006 IC ≥5%;Weighted Sum Stream & Lake WS	Stressor	Hydrologic Alteration	The percent of HUC12 weighted sum of water contiguous to impervious cover that is greater than or equal to 5 percent (IC ≥ 5%). 'Water contiguous to impervious cover' is defined as stream length contiguous to and lake shore length within 30m of impervious cover as defined by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	WATER_PC_2006_IC_GE5_PC_WS
166	% Water,2006 IC ≥15%;Weighted Sum Stream & Lake WS	Stressor	Hydrologic Alteration	The percent of HUC12 weighted sum of water contiguous to impervious cover that is greater than or equal to 15 percent (IC ≥ 15%). 'Water contiguous to impervious cover' is defined as stream length contiguous to and lake shore length within 30m of impervious cover as defined by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	WATER_PC_2006_IC_GE15_PC_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
167	% of Stream length contiguous to 2006 IC ≥ 5% WS	Stressor	Hydrologic Alteration	The percent of HUC12 stream length contiguous to (flow through) impervious cover greater than or equal to 5 percent (IC ≥ 5%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizonsystems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_GE_5PC_WS
168	% of Stream length contiguous to 2006 IC ≥ 15% WS	Stressor	Hydrologic Alteration	The percent of HUC12 stream length contiguous to (flow through) impervious cover greater than or equal to 15 percent (IC ≥ 15%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_GE_15PC_WS
169	% of Stream length contiguous to 2006 IC ≥ 25% WS	Stressor	Hydrologic Alteration	The percent of HUC12 stream length contiguous to (flow through) impervious cover greater than or equal to 25 percent (IC ≥ 25%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizon-systems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	STR_LGTH_PC_2006_IC_GE_25PC_WS
170	% of Lake Shore Length within 30 m 2006 IC ≥ 5% WS	Stressor	Hydrologic Alteration	The percent of HUC12 lake shore length within 30m of impervious cover greater than or equal to 5 percent (IC ≥ 5%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizonsystems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	LAKE_SHR_PC_2006_IC_GE5_PC_WS
171	% of Lake Shore Lgth within 30 m 2006 IC ≥ 15% WS	Stressor	Hydrologic Alteration	The percent of HUC12 lake shore length within 30m of impervious cover greater than or equal to 15 percent (IC ≥ 15%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizonsystems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T. G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region 4 WSIO Version 1, October 2013.	LAKE_SHR_PC_2006_IC_GE15_PC_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
	_			The percent of HUC12 lake shore length within 30m of impervious cover greater than or equal to 25 percent (IC ≥ 25%). Source data used was NLCD2006 version 1 (see metadata for more information) and NHD Plus Version 2 (http://www.horizonsystems.com/NHDPlus/NHDPlusV2_home.php). Reference: Wickham, J. D.; Wade, T.	_
			Hydrologic	G.; Norton, D. J.; 2014; Spatial patterns of watershed impervious cover relative to stream location; Ecological Indicators; Volume 40, May 2014, Pages 109–116. Region	
172	% of Lake Shore Lgth within 30 m 2006 IC ≥ 25% WS	Stressor	Alteration	4 WSIO Version 1, October 2013.	LAKE_SHR_PC_2006_IC_GE25_PC_WS
				The percent of the HUC12 that is classified as agricultural or urban (U-index) and contiguous to water (as identified by the Water Mask*) in the watershed. U-index land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtlLA) version 2004. ATtlLA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The Water Mask (see metadata for more information) is determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The	
173	% U-Index06 Contiguous H2O, in Watershed	Stressor	Hydrologic Alteration	combination of these two datasets represents surface water and is referred to as the Water Mask.	U_INDEX_06_CON_H2O_PCT_WS
174	% Contiguous Urban (2006) in Watershed	Stressor	Hydrologic Alteration	The percent of the HUC12 that is classified as urban by the 2006 National Land Cover Database and contiguous to surface water as identified by the Water Mask*. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Water Mask (see metadata for more information) is determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The combination of these two datasets represents surface water and is referred to as the Water Mask.	URB CONTIG NLCD06 PC WS
175	% Contiguous Agriculture (2006) in Watershed	Stressor	Hydrologic Alteration	The percent of the HUC12 that is classified as agriculture by the 2006 National Land Cover Database and contiguous to surface water as identified by the Water Mask*. Agricultural land cover classifications include 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82). Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). Region 4 WSIO Version 1, October 2013. *The Water Mask (see metadata for more information) is determined using grid analysis to combine surface water features of NLCD2006 and NHD Plus version 2. The combination of these two datasets represents surface water and is referred to as the Water Mask.	AG CONTIG NLCD06 PC WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
				The number of dams within a HUC12. Source data: The National Inventory of Dams	
				maintained by the US Army Corps of Engineers. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B86B2	
				9750-880D-4A58-91F2-2054FEA2E553%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature,	
				often referred to as ecosystem services. Additional information can be found here:	
				http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
			Hydrologic	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
176	Number of dams WS	Stressor	Alteration	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	DAMS_CNT_WS
				The number of road stream crossings in a HUC12. Streams were identified from	
				flowline features as represented in the catseed grid from the National Hydrography	
			Undualacia	Dataset (NHD) Plus version 2. Source data used was NHD Plus Version 2.1,	
177	Number 2010 Road Stream Crossings in Watershed	Stressor	Hydrologic Alteration	downloaded October 31, 2012 (see metadata for more information). Roads were determined from 2010 Streets. Region 4 WSIO Version 1, October 2013.	ROAD 2010 STRM X SO ALL CNT WS
1//	Namber 2010 Road Stream Crossings in Watershed	5000	Aiteration	determined from 2010 Streets. Region 4 Word Version 1, October 2015.	NOAD_2010_31NN_X_30_ALE_CN1_W3
				The number of roads crossing 1st - 3rd order streams in a HUC12. Catchment stream	
				order was identified from flowline features as represented in the catseed grid from	
				the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD	
			Hydrologic	Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information).	
178	Number 2010 Road 1st-3rd order Stream Crossings WS	Stressor	Alteration	Roads were determined from 2010 Streets. Region 4 WSIO Version 1, October 2013.	ROAD_2010_STRM_X_SO_1_3_CNT_WS
				The number of roads crossing 4th - 9th order streams in a HUC12. Catchment stream	
				order was identified from flowline features as represented in the catseed grid from the National Hydrography Dataset (NHD) Plus version 2. Source data used was NHD	
				Plus Version 2.1, downloaded October 31, 2012 (see metadata for more information).	
			Hydrologic	Roads were determined from 2010 Esri Streetmap. Region 4 WSIO Version 1, October	
179	Number 2010 Road 4th-9th order Stream Crossings WS	Stressor	Alteration	2013.	ROAD 2010 STRM X SO 4 9 CNT WS
				An estimate of the millions of gallons of water used daily (MGD) for domestic	
				purposes in each HUC12. For the purposes of this map, domestic or residential water	
				use includes all indoor and outdoor uses, such as for drinking, bathing, cleaning,	
				landscaping, and pools for primary residences. Metadata can be found here:	
				https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BC6DB EBAB-03EF-43C8-8DCA-8D2845E06A96%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature,	
				often referred to as ecosystem services. Additional information can be found here:	
				http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
			Hydrologic	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
180	Domestic Water Demand (MGD) 2005 WS	Stressor	Alteration	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	DOM_H2O_USE_MGD_2005_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
			Hydrologic	An estimate of the water used daily for agricultural irrigation for a HUC12 in the contiguous United States (million gallons/day). Estimates include self-supplied surface and groundwater, as well as water supplied by irrigation water providers, which may include governments, companies, or other organizations. Metadata can be found here:  https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BD511 3083-CFCD-48EC-BC24-0ADA5B9BDDB7%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
181	Agricultural water use in MGD 2005 WS  Industrial Water Use (MGD) WS	Stressor	Alteration  Hydrologic Alteration	An estimate of the millions of gallons of water used daily for industrial processes in each HUC12. Estimates include self-supplied surface and groundwater, as well as water supplied by water providers, which may include governments, companies, or other organizations. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B4E58 C04B-8A17-4B07-9EE4-1D9365D5B0D9%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	
183	Water use for Thermo Cooling Annually (MGY)	Stressor	Hydrologic Alteration	An estimate of the millions of gallons of water used annually (2009) for thermoelectric power generation in each HUC12. Thermoelectric power creates electricity through steam powered turbines. This map is based on water withdrawn and does not include water that is returned to the watershed. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BA15B D49A-0C75-4E64-902B-581D89F7B8AC%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	

imate of the millions of gallons of surface water in each HUC12 that is ned in reservoirs and/or behind dams using the National Dams Inventory data from 2009. This map only estimates volume and does not take into nt water rights, designated uses, or previous appropriations. Metadata can be here:  //edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B86B2880D-4A58-91F2-2054FEA2E553%7D. This dataset was created through the Atlas development effort. EnviroAtlas is a collection of interactive tools and coes that allows users to explore the many benefits people receive from nature,	
ned in reservoirs and/or behind dams using the National Dams Inventory data from 2009. This map only estimates volume and does not take into not water rights, designated uses, or previous appropriations. Metadata can be here:  //edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B86B2880D-4A58-91F2-2054FEA2E553%7D. This dataset was created through the Atlas development effort. EnviroAtlas is a collection of interactive tools and cres that allows users to explore the many benefits people receive from nature,	
ned in reservoirs and/or behind dams using the National Dams Inventory data from 2009. This map only estimates volume and does not take into not water rights, designated uses, or previous appropriations. Metadata can be here:  //edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B86B2880D-4A58-91F2-2054FEA2E553%7D. This dataset was created through the Atlas development effort. EnviroAtlas is a collection of interactive tools and cres that allows users to explore the many benefits people receive from nature,	
data from 2009. This map only estimates volume and does not take into not water rights, designated uses, or previous appropriations. Metadata can be here:  //edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B86B2880D-4A58-91F2-2054FEA2E553%7D. This dataset was created through the Atlas development effort. EnviroAtlas is a collection of interactive tools and cres that allows users to explore the many benefits people receive from nature,	
nt water rights, designated uses, or previous appropriations. Metadata can be here:  //edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B86B2880D-4A58-91F2-2054FEA2E553%7D. This dataset was created through the Atlas development effort. EnviroAtlas is a collection of interactive tools and cres that allows users to explore the many benefits people receive from nature,	
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Atlas development effort. EnviroAtlas is a collection of interactive tools and ces that allows users to explore the many benefits people receive from nature,	
ces that allows users to explore the many benefits people receive from nature,	
referred to as ecosystem services. Additional information can be found here:	
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n of stream features listed as impaired and requiring a TMDL under Section	
of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office	
ter "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes length	
s meeting criteria for classification as "streams". These criteria include: (1)	
e has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or	
ctor; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and	
of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-	
to the EPA Reach Address Database and is not in the NHD (blank NHD	
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	WBAREA 303D
nt of lakes, estuaries, and other areal water features in HUC12 listed as	
ed and requiring a TMDL under Section 303(d) of the Clean Water Act.	
ated as area of 303(d) listed impaired waters (WBAREA_303D) divided by total	
oody area (WBAREA_NHD + WBAREA_303D_CUSTOM).	WBAREA_303D_PCT
HUC12 length (km) of streams, rivers, and other linear water features that are	
listed as impaired and/or have one or more TMDLs. Calculated from the EPA	
ndexed datasets.	STREAMLGTH_303DTMDL
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	WBAREA_303DTMDL
/en of	ithe Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes length neeting criteria for classification as "streams". These criteria include: (1) has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or hor; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and corresponding NHDArea feature is StreamRiver; or (3) feature is custom- the EPA Reach Address Database and is not in the NHD (blank NHD DDE).  of stream features in HUC12 listed as impaired and requiring a TMDL under hog(d) of the Clean Water Act. Calculated as length of 303(d) listed impaired (STREAMLGTH_303D) divided by total stream length (STREAMLGTH_NHD + LGTH_303D_CUSTOM).  bakes, estuaries, and other areal water features listed as impaired and can a TMDL under Section 303(d) of the Clean Water Act in HUC12 (square rs). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" exed dataset.  of lakes, estuaries, and other areal water features in HUC12 listed as and requiring a TMDL under Section 303(d) of the Clean Water Act. das area of 303(d) listed impaired waters (WBAREA_303D) divided by total day area (WBAREA_NHD + WBAREA_303D_CUSTOM).  C12 length (km) of streams, rivers, and other linear water features that are ted as impaired and/or have one or more TMDLs. Calculated from the EPA Water "Impaired Waters with TMDLs" and "303(d) Listed Impaired Waters" exed datasets.  of HUC12's total length (km) of streams, rivers, and other linear water that are either listed as impaired and/or have one or more TMDLs. deform length of 303(d) listed impaired waters/waters with TMDLs deform length of 303(d) listed impaired waters/waters with TMDLs deform length of lakes, estuaries, and other areal water features that are ted as impaired and/or have one or more TMDLs. Calculated from the EPA Water "Impaired Waters with TMDLs" and "303(d) Listed Impaired Waters"

Order	Indicator_Name	Туре	Component	Description	Field_Name
192	% Watershed Waterbody Area 303d-Listed + TMDLs	Stressor	Severity of Pollutant Loading / Fragmentation  Severity of Pollutant	Percent of HUC12's total area (sq km) of lakes, estuaries, and other areal water features that are either listed as impaired and/or have one or more TMDLs. Calculated from area of 303(d) listed impaired waters/waters with TMDLs (WBAREA_303DTMDL) and area of NHD waterbody features (WBAREA_NHD). Count of waters listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water	WBAREA_303DTMDL_PCT
193	Watershed 303d-Listed Segments Count	Stressor	Loading / Fragmentation	segment IDs in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset.	CNT_303D_WATERS
194	Watershed Segment-Cause Combinations Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of impairments for waters listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique water segment ID-parent cause of impairment combinations in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset.	CNT_303D_IMPAIRMENTS
195	Watershed Impairment 303d and TMDL Segments Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of waters with TMDLs or listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "Impaired Waters with TMDLs" and "303(d) Listed Impaired Waters" NHD-indexed datasets.	CNT_303DTMDL_WATERS
196	Watershed Cause-Segment Count 303d-Listed + TMDLs	Stressor	Severity of Pollutant Loading / Fragmentation	Count of impairments for waters with TMDLs or waters listed as impaired and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as number of unique water segment ID-parent cause of impairment combinations in the EPA Office of Water "Impaired Waters with TMDLs" and "303(d) Listed Impaired Waters" NHD-indexed datasets.	CNT_303DTMDL_IMPAIRMENTS
197	Watershed Streamlength 303d-Listed Nutrients	Stressor	Severity of Pollutant Loading / Fragmentation	Length of stream features listed as impaired due to nutrient-related causes and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent cause of impairment. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_303D_NUTRIENTS
137	watershed streamength 3050 Easted Nationals	34 63301	Severity of Pollutant Loading /	Percent of stream features in HUC12 listed as impaired due to nutrient-related causes and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as length of 303(d) listed nutrient impaired streams (STREAMLGTH_303D_NUTRIENTS) divided by total stream length	STREET WILLTON
198	%Watershed Streamlength 303d-Listed Nutrients	Stressor	Fragmentation	(STREAMLGTH_NHD + STREAMLGTH_303D_CUSTOM).	STREAMLGTH_303D_NUTRIENTS_PCT
199	Watershed Waterbody Area 303d-Listed Nutrients	Stressor	Severity of Pollutant Loading / Fragmentation	Area of lakes, estuaries, and other areal water features listed as impaired due to nutrient-related causes and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes area of polygons with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent cause of impairment.	WBAREA_303D_NUTRIENTS

Order	Indicator_Name	Туре	Component	Description	Field_Name
200	% Watershed Waterbody Area 303d-Listed Nutrients	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of assessed lakes, estuaries, and other areal water features in HUC12 listed as impaired due to nutrient-related causes and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as area of 303(d) listed nutrient impaired waterbodies (WBAREA_303D_NUTRIENTS) divided by total waterbody area (WBAREA_NHD + WBAREA_303D_CUSTOM).	WBAREA 303D NUTRIENTS PCT
			Severity of Pollutant Loading /	Count of waters listed as impaired due to nutrients and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent cause of	
201	Watershed Nutrients 303d-Listed Segments Count  Watershed Streamlength 303d-Listed Pathogens	Stressor	Fragmentation  Severity of Pollutant Loading / Fragmentation	Length of stream features listed as impaired due to pathogens and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Pathogens" listed as a parent cause of impairment. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	CNT_303D_WATERS_NUTRIENTS  STREAMLGTH 303D PATHOGENS
203	%Watershed Streamlength 303d-Listed Pathogens	Stressor		Percent of stream features in HUC12 listed as impaired due to pathogens and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as length of 303(d) listed pathogen impaired streams (STREAMLGTH_303D_PATHOGENS)	STREAMLGTH 303D PATHOGENS PCT
204	Watershed Waterbody Area 303d-Listed Pathogens	Stressor	Severity of Pollutant Loading / Fragmentation	Area of lakes, estuaries, and other areal water features listed as impaired due to pathogens and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes area of polygons with "Pathogens" listed as a parent cause of impairment.  Area of lakes, estuaries, and other areal water features in HUC12 listed as impaired	WBAREA_303D_PATHOGENS
205	% Watershed Waterbody Area 303d-Listed Pathogens	Stressor	Severity of Pollutant Loading / Fragmentation	due to pathogens and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as area of 303(d) listed pathogen impaired waterbodies (WBAREA_303D_PATHOGENS) divided by total waterbody area (WBAREA_NHD + WBAREA_303D_CUSTOM). Count of waters listed as impaired due to pathogens and requiring a TMDL under	WBAREA_303D_PATHOGENS_PCT
206	Watershed Pathogen 303d-Listed Segments Count	Stressor	Severity of Pollutant Loading / Fragmentation	Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset with "Pathogens" listed as a parent cause of impairment.	CNT_303D_WATERS_PATHOGENS

Order	Indicator_Name	Туре	Component	Description	Field_Name
			-		_
				Length of stream features listed as impaired due to sediment and requiring a TMDL	
				under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from	
				the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only	
				includes length of lines meeting criteria for classification as "streams" and with	
				"Sediment" or "Turbidity" listed as a parent cause of impairment. Criteria for stream	
				classification include: (1) feature has NHD REACHCODE with FTYPE equal to	
				StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE	
			Severity of Pollutant	equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver;	
			Loading /	or (3) feature is custom-added to the EPA Reach Address Database and is not in the	
207	Watershed Streamlength 303d-Listed Sediment	Stressor	Fragmentation	NHD (blank NHD REACHCODE).	STREAMLGTH_303D_SEDIMENT
				Percent of stream features in HUC12 listed as impaired due to sediment and	
			Severity of Pollutant	requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as length	
			Loading /	of 303(d) listed sediment impaired streams (STREAMLGTH_303D_SEDIMENT) divided	
208	% Watershed Streamlength 303d-Listed Sediment	Stressor	Fragmentation	by total stream length (STREAMLGTH_NHD + STREAMLGTH_303D_CUSTOM).	STREAMLGTH_303D_SEDIMENT_PCT
				Area of lakes, estuaries, and other areal water features listed as impaired due to	
				sediment and requiring a TMDL under Section 303(d) of the Clean Water Act in	
			Severity of Pollutant	HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired	
			Loading /	Waters" NHD-indexed dataset. Only includes area of polygons with "Sediment" or	
209	Watershed Waterbody Area 303d-Listed Sediment	Stressor	Fragmentation	"Turbidity" listed as a parent cause of impairment.	WBAREA_303D_SEDIMENT
				Percent of lakes, estuaries, and other areal water features in HUC12 listed as	
				impaired due to sediment and requiring a TMDL under Section 303(d) of the Clean	
			Severity of Pollutant	Water Act. Calculated as area of 303(d) listed sediment impaired waterbodies	
			Loading /	(WBAREA_303D_SEDIMENT) divided by total waterbody area (WBAREA_NHD +	
210	% Watershed Waterbody Area 303d-Listed Sediment	Stressor	Fragmentation	WBAREA_303D_CUSTOM).	WBAREA_303D_SEDIMENT_PCT
				Count of waters listed as impaired due to sediment and requiring a TMDL under	
				Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique	
			Severity of Pollutant	state-assigned water segment IDs in the EPA Office of Water "303(d) Listed Impaired	
			Loading /	Waters" NHD-indexed dataset with "Sediment" or "Turbidity" listed as a parent cause	
211	Watershed Sediment 303d-Listed Segments Count	Stressor	Fragmentation	of impairment.	CNT_303D_WATERS_SEDIMENT
				Length of stream features listed as impaired due to metals and requiring a TMDL	
				under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from	
				the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only	
I				includes length of lines meeting criteria for classification as "streams" and with	
I				"Metals (other than Mercury)" listed as a parent cause of impairment. Criteria for	
I				stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to	
				StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE	
I			Severity of Pollutant	equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver;	
			Loading /	or (3) feature is custom-added to the EPA Reach Address Database and is not in the	
212	Watershed Streamlength 303d-Listed Metals	Stressor	Fragmentation	NHD (blank NHD REACHCODE).	STREAMLGTH_303D_METALS
				Percent of stream features in HUC12 listed as impaired due to metals and requiring a	
			Severity of Pollutant	TMDL under Section 303(d) of the Clean Water Act. Calculated as length of 303(d)	
			Loading /	listed metals impaired streams (STREAMLGTH_303D_METALS) divided by total	
213	% Watershed Streamlength 303d-Listed Metals	Stressor	Fragmentation	stream length (STREAMLGTH_NHD + STREAMLGTH_303D_CUSTOM).	STREAMLGTH_303D_METALS_PCT

Order	Indicator_Name	Туре	Component	Description	Field_Name
214	Watershed Waterbody Area 303d-Listed Metals	Stressor	Severity of Pollutant Loading / Fragmentation	Area of lakes, estuaries, and other areal water features listed as impaired due to metals and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12 (kilometers). Calculated from the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset. Only includes area of polygons with "Metals (other than Mercury)" listed as a parent cause of impairment.	WBAREA_303D_METALS
215	% Watershed Waterbody Area 303d-Listed Metals	Stressor	Severity of Pollutant Loading / Fragmentation	Percent of lakes, estuaries, and other areal water features in HUC12 listed as impaired due to metals and requiring a TMDL under Section 303(d) of the Clean Water Act. Calculated as area of 303(d) listed metals impaired waterbodies (WBAREA_303D_METALS) divided by total waterbody area (WBAREA_NHD + WBAREA_303D_CUSTOM).	WBAREA_303D_METALS_PCT
216	Watershed Metals 303d-Listed Segments Count	Stressor	Severity of Pollutant Loading / Fragmentation	Count of waters listed as impaired due to metals and requiring a TMDL under Section 303(d) of the Clean Water Act in HUC12. Calculated as the number of unique state-assigned water segment IDs in the EPA Office of Water "303(d) Listed Impaired Waters" NHD-indexed dataset with "Metals (other than Mercury)" listed as a parent cause of impairment.	CNT_303D_WATERS_METALS
217	Manure application (kg N/ha/yr)	Stressor	Severity of Pollutant Loading / Fragmentation	The mean rate of manure application to agricultural lands from confined animal feeding operations (CAFOs) within each HUC12 (kg N/ha/yr). Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B0A4E 7DDE-5F54-4DB5-8688-6AB2B1C8AFE5%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	
218	Synthetic N fertilizer application06(kg N/ha/yr)WS	Stressor	Severity of Pollutant Loading / Fragmentation	The mean rate of synthetic nitrogen fertilizer application to agricultural lands within a HUC12 (kg N/ha/yr). Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B09DF 9B39-6CC8-4DFF-A14D-1BA14C06321F%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	

Order	Indicator_Name	Туре	Component	Description	Field_Name
	_			·	
				An estimate of the 2006 annual deposition of reduced nitrogen a HUC12 (kilograms	
				per hectare). This map includes both dry and wet deposition of reduced nitrogen.	
				Metadata can be found here:	
				https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B07E5	
				D507-E1DA-40F6-8357-5A62990B0667%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here:	
			Severity of Pollutant	http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
			Loading /	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
219	Total nitrogen deposition 2006 (kg/ha)	Stressor	Fragmentation	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N DEP TOTAL 06 WS
213	Total introgen deposition 2000 (kg/ma)	511 (3301	Traginicitation	110012 table was translated to WBB 1100123 (August 2014). Region 4 W310 Version 1.	14_DET_101AE_00_W3
				An estimate of the 2002 total annual deposition of nitrogen in a HUC12 (kilograms	
				per hectare). This map includes both dry and wet deposition of oxidized and reduced	
				nitrogen. This dataset was created through the EnviroAtlas development effort.	
				EnviroAtlas is a collection of interactive tools and resources that allows users to	
				explore the many benefits people receive from nature, often referred to as	
				ecosystem services. Additional information can be found here:	
			Severity of Pollutant	http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
			Loading /	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
220	Total nitrogen deposition 2002 (kg/ha)	Stressor	Fragmentation	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_DEP_TOTAL_02_WS
				An estimate of the annual deposition of oxidized nitrogen within a HUC12 (kilograms	
				per hectare). This map includes both dry and wet deposition of oxidized nitrogen.	
				Metadata can be found here:	
				https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B07E5	
				D507-E1DA-40F6-8357-5A62990B0667%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature,	
				often referred to as ecosystem services. Additional information can be found here:	
			Severity of Pollutant	http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
			Loading /	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
221	Total reduced nitrogen deposition 2006 (kg/ha)	Stressor	Fragmentation	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_RED_DEP_TOTAL_06_WS
				An estimate of the 2002 annual deposition of reduced nitrogen in a HUC12 (kilograms	
				per hectare). This map includes both dry and wet deposition of reduced nitrogen.	
				This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a	
				collection of interactive tools and resources that allows users to explore the many	
				benefits people receive from nature, often referred to as ecosystem services.	
			Coverity of Dellaterat	Additional information can be found here:	
			-	http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
222	Total reduced pitrogen denosition 2003 (kg/ha)	Strossor	Loading /	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	NI DED DED TOTAL OZ MIS
222	Total reduced nitrogen deposition 2002 (kg/ha)	Stressor	Fragmentation	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	IN_VED_DEL IOINT 05 M2

Order	Indicator_Name	Туре	Component	Description	Field_Name
				An estimate of the total annual deposition of nitrogen within a HUC12 (kilograms per	
				hectare). This map includes both dry and wet deposition of oxidized and reduced	
				nitrogen. Metadata can be found here:	
				https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B07E5	
				D507-E1DA-40F6-8357-5A62990B0667%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature,	
				often referred to as ecosystem services. Additional information can be found here:	
			Severity of Pollutant	http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
223	Total oxidized nitrogen deposition 2006 (kg/ha)	Stressor	Loading / Fragmentation	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N OX DEP TOTAL OF WS
223	Total oxidized filtrogen deposition 2000 (kg/fla)	31163301	Tragilientation	Tioc12 table was translated to WBD Hoc12s (August 2014). Region 4 WSiO Version 1.	N_OX_DEF_TOTAL_00_W3
				An estimate of the 2002 annual deposition of oxidized nitrogen within each HUC12	
				(Kilograms per hectare). This map includes both dry and wet deposition of oxidized	
				nitrogen. This dataset was created through the EnviroAtlas development effort.	
				EnviroAtlas is a collection of interactive tools and resources that allows users to	
				explore the many benefits people receive from nature, often referred to as	
				ecosystem services. Additional information can be found here:	
			Severity of Pollutant	http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
224	Total avidinal nitragen deposition 2002 (kg/ha)	Chusasau	Loading /	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	N OV DED TOTAL OF ME
224	Total oxidized nitrogen deposition 2002 (kg/ha)	Stressor	Fragmentation	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	N_OX_DEP_TOTAL_02_WS
				An estimate of the 2006 annual deposition of sulfur within each HUC12 (kilograms	
				per hectare). This map includes both dry and wet deposition of sulfur. Metadata can	
				be found here:	
				https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B07E5	
				D507-E1DA-40F6-8357-5A62990B0667%7D. This dataset was created through the	
				EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and	
				resources that allows users to explore the many benefits people receive from nature,	
			Consultant of Dalling	often referred to as ecosystem services. Additional information can be found here:	
			Severity of Pollutant Loading /	http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
225	Total sulfur deposition 2006 (kg/ha)	Stressor	Fragmentation	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	SLE DEP TOTAL 06 WS
	Total salidi deposition 2000 (ng/11d)	301 03301	- rubincillation	TOOLE COST AND CONSTRUCT TO THOS THOULES (MURANE 2014). INCRION 4 WOLD VEISION I.	<u> </u>
				An estimate of the total annual deposition of sulfur within each HUC12 (kilograms per	
				hectare). This map includes both dry and wet deposition of sulfur. This dataset was	
				created through the EnviroAtlas development effort. EnviroAtlas is a collection of	
				interactive tools and resources that allows users to explore the many benefits people	
				receive from nature, often referred to as ecosystem services. Additional information	
			Severity of Pollutant	can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and	
226	T . I . If . I	c.	Loading /	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
226	Total sulfur deposition 2002 (kg/ha)	Stressor	Fragmentation	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	SLF_DEP_TOTAL_02_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
227	% Human Use Change, U-Index Change 2001-06 WS	Stressor	WS -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in agricultural or urban classifications (U-index) from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. U-index land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index is consistent with the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	U_INDEX_CHG_2001_06_PCT_WS
228	% Human Use Change, U-Index 2 Change 2001-06 WS	Stressor	WS -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in barren, agricultural or urban classifications (U-index 2) from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. U-index 2 cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data used was NLCD2006 version 1, downloaded February 2011 (see metadata for more information). U-index 2 was modified from the Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	U_INDEX2_CHG_2001_06_PCT_WS
229	% Urban Change 2001-06 WS	Stressor	WS -History, Legacy of past, trajectory of future land use	The percent of HUC12 change in urban classifications from 2001 to 2006. Change was determined by comparing the 2001 and 2006 National Land Cover Change Datasets; version 1. Urban land cover classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium Intensity' (code 23), and 'Developed, High Intensity' (code 24) by the 2006 National Land Cover Database.	URBAN_CHG_2001_06_PCT_WS
230	% Agriculture Change 2001-06 WS	Stressor	of past, trajectory of future land use	can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013.	AG_CHG_2001_06_PCT_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
			-		_
				The percent of HUC12 change in agricultural or urban classifications (U-index) within	
				the Hydrologically Connected Zone*. Change was determined by comparing the 2001	
				and 2006 National Land Cover Change Datasets; version 1. U-index land cover	
				classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity'	
				(code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code	
				24), 'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National	
				Land Cover Database. Source data used was NLCD2006 version 1, downloaded	
				February 2011 (see metadata for more information). U-index is consistent with the	
				Analytical Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA	
				user guide can be found here: http://www.epa.gov/esd/land-	
				sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version 1, October 2013. *The	
				Hydrologically Connected Zone (HCZ, see metadata for more information) is	
				determined using grid analysis to combine surface water features from NLCD2006	
				and NHD Plus version 2. It also includes areas contiguous to surface water that also	
			of past, trajectory of	_	
231	% Human Use Change, U-Index Change 2001-06 HCZ	Stressor	future land use	represents the Hydrologically Connected Zone (HCZ).	U_INDEX_CHG_2001_06_PCT_HZ
				The percent of HUC12 change in barren, agricultural or urban classifications (U-index	
				2) within the Hydrologically Connected Zone*. Change was determined by comparing	
				the 2001 and 2006 National Land Cover Change Datasets; version 1. U-index 2 cover	
				classifications include 'Developed, Open Space' (code 21), 'Developed, Low Intensity'	
				(code 22), 'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code	
				24), 'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and	
				'Cultivated Crops' (code 82) by the 2006 National Land Cover Database. Source data	
				used was NLCD2006 version 1, downloaded February 2011 (see metadata for more	
				information). U-index 2 was modified from the Analytical Tools Interface for	
				Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here:	
				http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version	
				1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for more	
				information) is determined using grid analysis to combine surface water features	
			HCZ -History, Legacy	from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to surface	
			of past, trajectory of	water that also has a wetness index value of 550 or greater. The combination of these	
232	% Human Use Change, U-Index 2 Change 2001-06 HCZ	Stressor	future land use	three datasets represents the Hydrologically Connected Zone (HCZ).	U_INDEX2_CHG_2001_06_PCT_HZ
				The percent of HUC12 change in urban classifications within the Hydrologically	
				Connected Zone*. Change was determined by comparing the 2001 and 2006 National	
				Land Cover Change Datasets; version 1. Urban land cover classifications include	
				'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed,	
				Medium Intensity' (code 23), and 'Developed, High Intensity' (code 24) by the 2006	
				National Land Cover Database. Source data used was NLCD2006 version 1,	
				downloaded February 2011 (see metadata for more information). Region 4 WSIO	
				Version 1, October 2013. *The Hydrologically Connected Zone (HCZ, see metadata for	
				more information) is determined using grid analysis to combine surface water	
			HCZ -History, Legacy	features from NLCD2006 and NHD Plus version 2. It also includes areas contiguous to	
			of past, trajectory of	surface water that also has a wetness index value of 550 or greater. The combination	
233	% Urban Change 2001-06 HCZ	Stressor	future land use	of these three datasets represents the Hydrologically Connected Zone (HCZ).	URBAN_CHG_2001_06_PCT_HZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
				•	
				The percent of HUC12 change in agricultural classifications within the Hydrologically	
				Connected Zone*. Change was determined by comparing the 2001 and 2006 National	
				Land Cover Change Datasets; version 1. Agricultural land cover classifications include	
				'Pasture/Hay' (code 81) and 'Cultivated Crops' (code 82) by the 2006 National Land	
				Cover Database. Source data used was NLCD2006 version 1, downloaded February	
				2011 (see metadata for more information). U-index is consistent with the Analytical	
				Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide	
				can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf.	
				Region 4 WSIO Version 1, October 2013. *The Hydrologically Connected Zone (HCZ,	
				see metadata for more information) is determined using grid analysis to combine	
				surface water features from NLCD2006 and NHD Plus version 2. It also includes areas	
				contiguous to surface water that also has a wetness index value of 550 or greater.	
				The combination of these three datasets represents the Hydrologically Connected	
234	% Agriculture Change 2001-06 HCZ	Stressor	future land use	Zone (HCZ).	AG_CHG_2001_06_PCT_HZ
				The percent of HUC12 change in agricultural or urban classifications (U-index) within	
				the Riparian Zone*. Change was determined by comparing the 2001 and 2006	
				National Land Cover Change Datasets; version 1. U-index land cover classifications	
				include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22),	
				'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24),	
				'Pasture/Hay' (code 81), and 'Cultivated Crops' (code 82) by the 2006 National Land	
				Cover Database. Source data used was NLCD2006 version 1, downloaded February	
				2011 (see metadata for more information). U-index is consistent with the Analytical	
				Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide	
				can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf.	
				Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for	
				more information) is determined using grid analysis to combine surface water	
				features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter	
			,	buffer is placed around these features. The combination of these two datasets and	
				all cells with a distance of 108 meters or less from surface water are included in the	
235	% Human Use Change, U-Index Change 2001-06 RZ	Stressor	future land use	Riparian Zone (RZ).	U_INDEX_CHG_2001_06_PCT_RZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
	_				_
				The percent of HUC12 change in barren, agricultural or urban classifications (U-index	
				2) within the Riparian Zone*. Change was determined by comparing the 2001 and	
				2006 National Land Cover Change Datasets; version 1. U-index 2 cover classifications	
				include 'Developed, Open Space' (code 21), 'Developed, Low Intensity' (code 22),	
				'Developed, Medium Intensity' (code 23), 'Developed, High Intensity' (code 24),	
				'Barren Land (Rock/Sand/Clay)' (code 31), 'Pasture/Hay' (code 81), and 'Cultivated	
				Crops' (code 82) by the 2006 National Land Cover Database. Source data used was	
				NLCD2006 version 1, downloaded February 2011 (see metadata for more	
				information). U-index 2 was modified from the Analytical Tools Interface for	
				Landscape Assessments (ATtILA) version 2004. ATtILA user guide can be found here:	
				http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf. Region 4 WSIO Version	
				1, October 2013. *The Riparian Zone (RZ, see metadata for more information) is	
				determined using grid analysis to combine surface water features from NLCD2006	
			RZ -History, Legacy	and NHD Plus version 2; then an approximate 100 meter buffer is placed around	
			of past, trajectory of	these features. The combination of these two datasets and all cells with a distance of	
236	% Human Use Change, U-Index 2 Change 2001-06 RZ	Stressor	future land use	108 meters or less from surface water are included in the Riparian Zone (RZ).	U_INDEX2_CHG_2001_06_PCT_RZ
				The percent of HUC12 change in urban classifications within the Riparian Zone*.	
				Change was determined by comparing the 2001 and 2006 National Land Cover	
				Change Datasets; version 1. Urban land cover classifications include 'Developed,	
				Open Space' (code 21), 'Developed, Low Intensity' (code 22), 'Developed, Medium	
				Intensity' (code 23), and 'Developed, High Intensity' (code 24) by the 2006 National	
				Land Cover Database. Source data used was NLCD2006 version 1, downloaded	
				February 2011 (see metadata for more information). Region 4 WSIO Version 1,	
				October 2013. *The Riparian Zone (RZ, see metadata for more information) is	
			D7 11:	determined using grid analysis to combine surface water features from NLCD2006	
			RZ -History, Legacy	and NHD Plus version 2; then an approximate 100 meter buffer is placed around	
237	0/ Linhan Changa 2001 0C B7	Chunnan	of past, trajectory of		LIDDAN CHC 2001 OC DCT D7
237	% Urban Change 2001-06 RZ	Stressor	future land use	108 meters or less from surface water are included in the Riparian Zone (RZ).	URBAN_CHG_2001_06_PCT_RZ
				The percent of HUC12 change in agricultural classifications within the Riparian Zone*.	
				Change was determined by comparing the 2001 and 2006 National Land Cover	
				Change Datasets; version 1. Agricultural land cover classifications include	
				'Pasture/Hay' (code 81) and 'Cultivated Crops' (code 82) by the 2006 National Land	
				Cover Database. Source data used was NLCD2006 version 1, downloaded February	
				2011 (see metadata for more information). U-index is consistent with the Analytical	
				Tools Interface for Landscape Assessments (ATtILA) version 2004. ATtILA user guide	
				can be found here: http://www.epa.gov/esd/land-sci/attila/pdf/user_guide.pdf.	
				Region 4 WSIO Version 1, October 2013. *The Riparian Zone (RZ, see metadata for	
				more information) is determined using grid analysis to combine surface water	
				features from NLCD2006 and NHD Plus version 2; then an approximate 100 meter	
			RZ -History, Legacy	buffer is placed around these features. The combination of these two datasets and	
			of past, trajectory of	all cells with a distance of 108 meters or less from surface water are included in the	
238	% Agriculture Change 2001-06 RZ	Stressor	future land use	Riparian Zone (RZ).	AG_CHG_2001_06_PCT_RZ

Order	Indicator_Name	Туре	Component	Description	Field_Name
	_			Classifies HUC12 watershed as located entirely in one single US state or overlapping	_
				multiple states. Value of 1 if HUC12 is located in a single state. Value of 0 if HUC12	
				overlaps multiple states. Calculated from the US Census Bureau 2013 TIGER state	
				boundaries (downloaded July 2014) and the "NHDPlus2 WBD Snapshot" (downloaded	
239	Single State HUC12 Flag	Social	Flags	March 2014).	INSTATE 14 15
	July State House House	Jociai	1.055	1	
				Length of stream features assessed under Section 305(b) of the Clean Water Act in	
				HUC12 (kilometers). Represents only the most recent assessment cycle that the state	
				has provided to EPA as geospatial data. Calculated from the EPA Office of Water	
				"305(b) Waters as Assessed" NHD-indexed dataset. Only includes length of lines	
				meeting criteria for classification as "streams". These criteria include: (1) feature has	
				NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2)	
				feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of	
				corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the	
240	Watershed Streamlength Assessed	Social	Level of Information	EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_305B
				Percent of stream features in HUC12 assessed under Section 305(b) of the Clean	
				Water Act. Calculated as length of assessed streams (STREAMLGTH_305B) divided by	
241	% Watershed Streamlength Assessed	Social	Level of Information	total stream length (STREAMLGTH NHD + STREAMLGTH 305B CUSTOM).	STREAMLGTH 305B PCT
	70 Watershed & Carmengary Issessed	Jociai	2010101111011110111	Total stream length (a minimizer in _ minimizer in _ soos _ coordin).	5.11.2.11.2.5035_1.61
				Area of lakes, estuaries, and other areal water features assessed under Section 305(b)	
				of the Clean Water Act in HUC12 (square kilometers). Calculated from the EPA Office	
242	Watershed Waterbody Area Assessed	Social	Level of Information	of Water "305(b) Waters as Assessed" NHD-indexed dataset.	WBAREA_305B
				Percent of lakes, estuaries, and other areal water features in HUC12 assessed under	
				Section 305(b) of the Clean Water Act. Calculated as area of assessed waterbodies	
				(WBAREA_305B) divided by total waterbody area (WBAREA_NHD +	
243	% Watershed Waterbody Area Assessed	Social	Level of Information	WBAREA_305B_CUSTOM).	WBAREA_305B_PCT
				Count of waters with TMDLs in HUC12. Calculated as the number of unique state-	
				assigned water segment IDs the EPA Office of Water "Impaired Waters with TMDLs"	
244	Watershed Segments with TMDLs Count	Social	Level of Information	NHD-indexed dataset.	CNT_TMDL_WATERS
				Count of impairments with TMDLs in HUC12. Calculated as the number of unique	
				water segment ID-parent cause of impairment combinations in the EPA Office of	
245	Watershed TMDL-Segment-Cause Count	Social	Level of Information	Water "Impaired Waters with TMDLs" NHD-indexed dataset.	CNT TMDL IMPAIRMENTS
				Count of TMDLs in HUC12. Calculated as the number of unique water segment ID-	
				TMDL pollutant combinations in the EPA Office of Water "Impaired Waters with	
246	Watershed TMDL-Segment-Pollutant Count	Social	Level of Information	TMDLs" NHD-indexed dataset.	CNT_TMDLS
				Ratio of number of TMDLs to impairments in HUC12. Calculated from TMDL count	
				(CNT_TMDLS) and count of impairments for 303(d) listed waters/waters with TMDLs	
247	Watershed Count Ratio TMDLs to Impairments	Social	Level of Information	(CNT_303DTMDL_IMPAIRMENTS).	TMDL_IMPAIRMENT_RAT
				Level of the second for the second to the se	
				Length of stream features with TMDLs in HUC12 (kilometers). Calculated from the	
				EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only	
				includes length of lines meeting criteria for classification as "streams" and with "Sediment" or "Turbidity" listed as a parent cause of impairment. Criteria for stream	
				classification include: (1) feature has NHD REACHCODE with FTYPE equal to	
				StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE	
				equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver;	
				or (3) feature is custom-added to the EPA Reach Address Database and is not in the	
248	Watershed Streamlength with TMDLs	Social	Level of Information	NHD (blank NHD REACHCODE).	STREAMLGTH TMDL
	Water sinea sareannengar with TIVIDES	Jocial	Level of illioinfation	THE LOUIS HE REACTIONS.	STITE WILL THAIDE

Order	Indicator_Name	Туре	Component	Description	Field_Name
			·	Percent of stream features in HUC12 with TMDLs. Calculated as length of streams	_
				with TMDLs (STREAMLGTH_TMDL) divided by total stream length	
249	% Watershed Streamlength with TMDLs	Social	Level of Information	(STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH_TMDL_PCT
				Area of lakes, estuaries, and other areal water features with TMDLs in HUC12 (square	
				kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs"	
250	Watershed Waterbody Area with TMDLs	Social	Level of Information	NHD-indexed dataset.	WBAREA_TMDL
	,			Percent of lakes, estuaries, and other areal water features in HUC12 with TMDLs.	_
				Calculated from area of waterbodies with TMDLs (WBAREA 303D) and total	
251	% Watershed Waterbody Area with TMDLs	Social	Level of Information	waterbody area (WBAREA NHD + WBAREA TMDL CUSTOM).	WBAREA TMDL PCT
				Length of stream features with a nutrient-related TMDL in HUC12 (kilometers).	
				Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed	
				dataset. Only includes length of lines meeting criteria for classification as "streams"	
				and with "Nutrients", "Organic Enrichment/Oxygen Depletion", "Algal Growth", or	
				"Noxious Aquatic Plants" listed as a parent TMDL pollutant. Criteria for stream	
				classification include: (1) feature has NHD REACHCODE with FTYPE equal to	
				StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE	
				equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver;	
				or (3) feature is custom-added to the EPA Reach Address Database and is not in the	
252	Watershed Streamlength with Nutrient TMDLs	Social	Level of Information	NHD (blank NHD REACHCODE).	STREAMLGTH TMDL NUTRIENTS
	The state of the s				
				Percent of stream features in HUC12 with a nutrient-related TMDL. Calculated as	
				length of 303(d) listed nutrient impaired streams (STREAMLGTH_TMDL_NUTRIENTS)	
253	% Watershed Streamlength with Nutrient TMDLs	Social	Level of Information	divided by total stream length (STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH TMDL NUTRIENTS PCT
				Area of lakes, estuaries, and other areal water features with a nutrient-related TMDL	
				in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters	
				with TMDLs" NHD-indexed dataset. Only includes area of polygons with "Nutrients",	
				"Organic Enrichment/Oxygen Depletion", "Algal Growth", or "Noxious Aquatic Plants"	
254	Watershed Waterbody Area with Nutrient TMDLs	Social	Level of Information	listed as a parent TMDL pollutant.	WBAREA TMDL NUTRIENTS
				Percent of assessed lakes, estuaries, and other areal water features in HUC12 with a	
				nutrient-related TMDL. Calculated as area of waterbodies with a nutrient-related	
				TMDL (WBAREA_TMDL_NUTRIENTS) divided by total waterbody area (WBAREA_NHD	
255	% Watershed Waterbody Area with Nutrient TMDLs	Social	Level of Information	+ WBAREA TMDL CUSTOM).	WBAREA TMDL NUTRIENTS PCT
				Count of waters with a nutrient-related TMDL in HUC12. Calculated as the number of	
				unique state-assigned water segment IDs the EPA Office of Water "Impaired Waters	
				with TMDLs" NHD-indexed dataset with "Nutrients", "Organic Enrichment/Oxygen	
				Depletion", "Algal Growth", or "Noxious Aquatic Plants" listed as a parent TMDL	
256	Watershed Segments with Nutrient TMDLs Count	Social	Level of Information		CNT_TMDL_WATERS_NUTRIENTS
	9				
				Length of stream features with a pathogen TMDL in HUC12 (kilometers). Calculated	
				from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset.	
				Only includes length of lines meeting criteria for classification as "streams" and with	
				"Pathogens" listed as a parent TMDL pollutant. Criteria for stream classification	
				include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver,	
				CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to	
				Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3)	
				feature is custom-added to the EPA Reach Address Database and is not in the NHD	
257	Watershed Streamlength with Pathogen TMDLs	Social	Level of Information	(blank NHD REACHCODE).	STREAMLGTH TMDL PATHOGENS
				11.	

Order	Indicator_Name	Туре	Component	Description	Field_Name
	_				
				Percent of stream features in HUC12 with a pathogen TMDL. Calculated as length of	
				303(d) listed pathogen impaired streams (STREAMLGTH_TMDL_PATHOGENS) divided	
258	% Watershed Streamlength with Pathogen TMDLs	Social	Level of Information	by total stream length (STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH_TMDL_PATHOGENS_PCT
				Area of lakes, estuaries, and other areal water features with a pathogens TMDL in	
				HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with	
				TMDLs" NHD-indexed dataset. Only includes area of polygons with "Pathogens" listed	
259	Watershed Waterbody Area with Pathogen TMDLs	Social	Level of Information	as a parent TMDL pollutant.	WBAREA_TMDL_PATHOGENS
				Area of lakes, estuaries, and other areal water features in HUC12 with a pathogens	
				TMDL. Calculated as area of waterbodies with a pathogens TMDL	
				(WBAREA_TMDL_PATHOGENS) divided by total waterbody area (WBAREA_NHD +	
260	% Watershed Waterbody Area with Pathogen TMDLs	Social	Level of Information	WBAREA_TMDL_CUSTOM).	WBAREA_TMDL_PATHOGENS_PCT
				Count of waters with a pathogens TMDL in HUC12. Calculated as the number of	
				unique state-assigned water segment IDs the EPA Office of Water "Impaired Waters	
				with TMDLs" NHD-indexed dataset with "Pathogens" listed as a parent TMDL	
261	Watershed Segments with Pathogen TMDLs Count	Social	Level of Information	pollutant.	CNT_TMDL_WATERS_PATHOGENS
				Length of stream features with a sediment TMDL in HUC12 (kilometers). Calculated	
				from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset.	
				Only includes length of lines meeting criteria for classification as "streams" and with	
				"Sediment" or "Turbidity" listed as a parent TMDL pollutant. Criteria for stream	
				classification include: (1) feature has NHD REACHCODE with FTYPE equal to	
				StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE	
				equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver;	
				or (3) feature is custom-added to the EPA Reach Address Database and is not in the	
262	Watershed Streamlength with Sediment TMDLs	Social	Level of Information	NHD (blank NHD REACHCODE).	STREAMLGTH_TMDL_SEDIMENT
				Percent of stream features in HUC12 with a sediment TMDL. Calculated as length of	
262	O/ M/standard Characalanath with Cadinagat TAADIa	C:-!	lavalatintamentian	streams with sediment TMDLs (STREAMLGTH_TMDL_SEDIMENT) divided by total	CTREADALCTIL TAARL CERINAENT RCT
263	% Watershed Streamlength with Sediment TMDLs	Social	Level of Information	stream length (STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH_TMDL_SEDIMENT_PCT
				Area of lakes, estuaries, and other areal water features with a sediment TMDL in	
				HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with	
				TMDLs" NHD-indexed dataset. Only includes area of polygons with "Sediment" or	
264	Watershed Waterbody Area with Sediment TMDLs	Social	Level of Information	1 1-	WBAREA TMDL SEDIMENT
204	watershed waterbody Area with Sediment TWIDLS	JUCIAI	Level of illiorniation	Percent of lakes, estuaries, and other areal water features in HUC12 with a sediment	WBANLA_INIDL_SEDIMENT
				TMDL. Calculated as area of waterbodies with sediment a TMDL	
				(WBAREA TMDL SEDIMENT) divided by total waterbody area (WBAREA NHD +	
265	% Watershed Waterbody Area with Sediment TMDLs	Social	Level of Information	WBAREA_IMDL_SEDIMENT) divided by total waterbody area (WBAREA_NHD +	WBAREA TMDL SEDIMENT PCT
203	70 Watershed Waterbody Area with Sediment TWDLS	Juciai	Level of illioinfation	Count of waters with a sediment TMDL in HUC12. Calculated as the number of unique	WDANLA_HVIDL_SEDIIVILIVI_FCI
				state-assigned water segment IDs the EPA Office of Water "Impaired Waters with	
				TMDLs" NHD-indexed dataset with "Sediment" or "Turbidity" listed as a parent TMDL	
266	Watershed Segments with Sediment TMDLs Count	Social	Level of Information	, , , , , , , , , , , , , , , , , , , ,	CNT TMDL WATERS SEDIMENT
200	I watershed Segments with Sediment TiviDEs Coulit	Juciai	Level of illioringtion	Iponacanc.	CIVI_IIVIDL_WAILINS_SEDIIVILIVI

Order	Indicator_Name	Туре	Component	Description	Field_Name
267	Watershed Streamlength with Metals TMDLs	Social	Level of Information	Length of stream features with a metals TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes length of lines meeting criteria for classification as "streams" and with "Metals (other than Mercury)" listed as a parent TMDL pollutant. Criteria for stream classification include: (1) feature has NHD REACHCODE with FTYPE equal to StreamRiver, CanalDitch, or Connector; (2) feature has NHD REACHCODE with FTYPE equal to Artificial Path and FTYPE of corresponding NHDArea feature is StreamRiver; or (3) feature is custom-added to the EPA Reach Address Database and is not in the NHD (blank NHD REACHCODE).	STREAMLGTH_TMDL_METALS
				Percent of stream features in HUC12 with a metals TMDL. Calculated as length of 303(d) listed metals impaired streams (STREAMLGTH TMDL METALS) divided by	
268	% Watershed Streamlength with Metals TMDLs	Social	Level of Information	total stream length (STREAMLGTH_NHD + STREAMLGTH_TMDL_CUSTOM).	STREAMLGTH_TMDL_METALS_PCT
269	Watershed Waterbody Area with Metals TMDLs	Social	Level of Information	Area of lakes, estuaries, and other areal water features with a metals TMDL in HUC12 (kilometers). Calculated from the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset. Only includes area of polygons with "Metals (other than Mercury)" listed as a parent TMDL pollutant.	WBAREA TMDL METALS
203	Watershea Waterbady Area Will Metals Timbes	Social	Ecycl of information	Percent of lakes, estuaries, and other areal water features in HUC12 with a metals TMDL. Calculated as area of waterbodies with a metals TMDL (WBAREA_TMDL_METALS) divided by total waterbody area (WBAREA_NHD +	WORKER_INDE_NET IES
270	% Watershed Waterbody Area with Metals TMDLs	Social	Level of Information	WBAREA_TMDL_CUSTOM).  Count of waters with a metals TMDL in HUC12. Calculated as the number of unique state-assigned water segment IDs the EPA Office of Water "Impaired Waters with TMDLs" NHD-indexed dataset with "Metals (other than Mercury)" listed as a parent	WBAREA_TMDL_METALS_PCT
271	Watershed Segments with Metals TMDLs Count	Social	Level of Information	1	CNT_TMDL_WATERS_METALS
272	Percent potentially restorable wetlands WS	Social	Complexity / Suitability	An estimate of the percent of land within a HUC12 that may be suitable for wetland restoration. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7B80AF CF1D-0C2B-4E4A-B07A-B2B57E6772D5%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	WTLD_REST_POT_PCT_WS
273	Watershed NPDES Permit Count	Social	Complexity / Suitability	Count of National Permit Discharge Elimination System (NPDES) permits in the HUC12 watershed, including both active and expired NPDES permits. Provides an estimate of the prevalence of point sources of pollution in the HUC12 watershed. Calculated from the EPA Office of Water "NPDES Permitted Facilities" NHD-indexed dataset (downloaded February 2014) and the "NHDPlus2 WBD Snapshot" (downloaded March 2014). Calculated as the number of NPDES permit features in each HUC12 polygon.	NPDES_PERMIT_CNT

Order	Indicator_Name	Туре	Component	Description	Field_Name
274	Percent small natural areas WS	Social	Complexity / Suitability	The percent of land within a HUC12 that are covered by small patches of natural areas. Small natural areas are less 500 acres and covered by forests, shrubs, grasslands, barren land, or wetlands. It excludes areas that are covered by agriculture and developed land. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BB803 EDB7-3BE0-4ADF-870C-2EB9733310AE%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	NAT_SM_AREA_PCT_WS
275	Percent medium natural areas WS	Social	Complexity / Suitability	The percent of land within each HUC12 that are covered by medium sized natural areas. Medium natural areas are areas less than 25,000 acres but greater than 500 acres and are covered by forests, shrubs, grasslands, barren land, or wetlands. It excludes areas that are covered by agriculture and developed land. Metadata can be found here:  https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BB803 EDB7-3BE0-4ADF-870C-2EB9733310AE%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	NAT_MD_AREA_PCT_WS
276	Percent large natural areas WS	Social	Complexity / Suitability	The percent of land within each HUC12 that are covered by large natural areas. Large natural areas are greater than 25,000 acres and covered by forests, shrubs, grasslands, barren land, or wetlands. It excludes areas that are covered by agriculture and developed land. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BB803 EDB7-3BE0-4ADF-870C-2EB9733310AE%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	NAT_LG_AREA_PCT_WS

Order	Indicator_Name	Туре	Component	Description	Field_Name
			Complexity /	The percentage of land within a HUC12 that is protected. It includes all lands that have been classified by International Union for Conservation of Nature (IUCN) as protected areas. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BC5FF DE8E-7C27-4F50-AFEF-082E8A08C00A%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
277	Percent land with any IUCN status WS	Social	Suitability	The percent of land within a HUC12 that is designated as Status 1 or 2 under the USGS Gap Analysis Program. These lands have permanent protections in place limiting visitation, use, and human impacts. Lands with status 1 have more restrictions in place to minimize disturbance and maintain the land's natural state. Metadata can be found here:  https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BC5FF DE8E-7C27-4F50-AFEF-082E8A08C00A%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and	IUCN_ALL_PCI_WS
278	Percent GAP status 1 and 2 WS	Social	Complexity / Suitability  Complexity /	http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.  The percent of land within a HUC12 that is designated as Status 3 under the USGS Gap Analysis Program. These areas have permanent protection from conversion of natural land cover for the majority of area. Subject to extractive uses of either broad, low-intensity type (e.g Logging) or localized intense type (e.g Mining). Confers protection to federally listed endangered and threatened species throughout the area. Metadata can be found here: https://edg.epa.gov/metadata/catalog/search/resource/details.page?uuid=%7BC5FFDE8E-7C27-4F50-AFEF-082E8A08C00A%7D. This dataset was created through the EnviroAtlas development effort. EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Additional information can be found here: http://enviroatlas.epa.gov/enviroatlas/atlas.html and http://enviroatlas.epa.gov/EnviroAtlas/DataFactSheets. Method: The EnviroAtlas	
279	Percent GAP status 3 WS	Social	Suitability	HUC12 table was translated to WBD HUC12s (August 2014). Region 4 WSIO Version 1.	GAP_PROT_3_PCT_WS

## Watershed Indicators WSIO version 1.3

Order	Indicator_Name	Туре	Component	Description	Field_Name
				Percent of total watershed area designated as drinking water source protection area	
				(SPA). Based on state data consolidated by EPA in SDWIS SAFE DRINKING WATER	
				INFORMATION SYSTEM	
				(http://water.epa.gov/scitech/datait/databases/drink/sdwisfed/index.cfm)	
				processed March 2014. Includes areas protecting surface drinking water sources but	
				not groundwater drinking sources. Multiple drinking water sources and their	
				individual SPAs can occur and overlap. Each SPA % of area is counted individually and	
280	Percent Drinking Water Source Protection Area WS	Social	Human Health	added, thus total values can exceed 100%.	DW_SWPA_PCT_WS